The OIL WEEKLY

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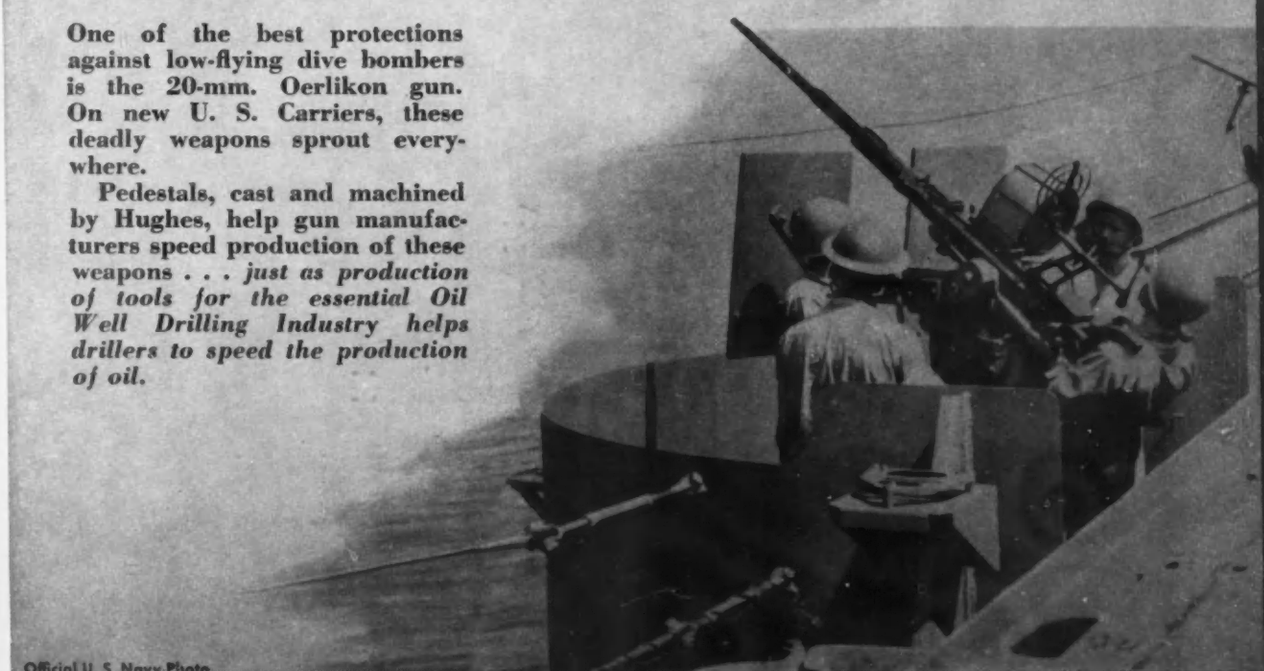

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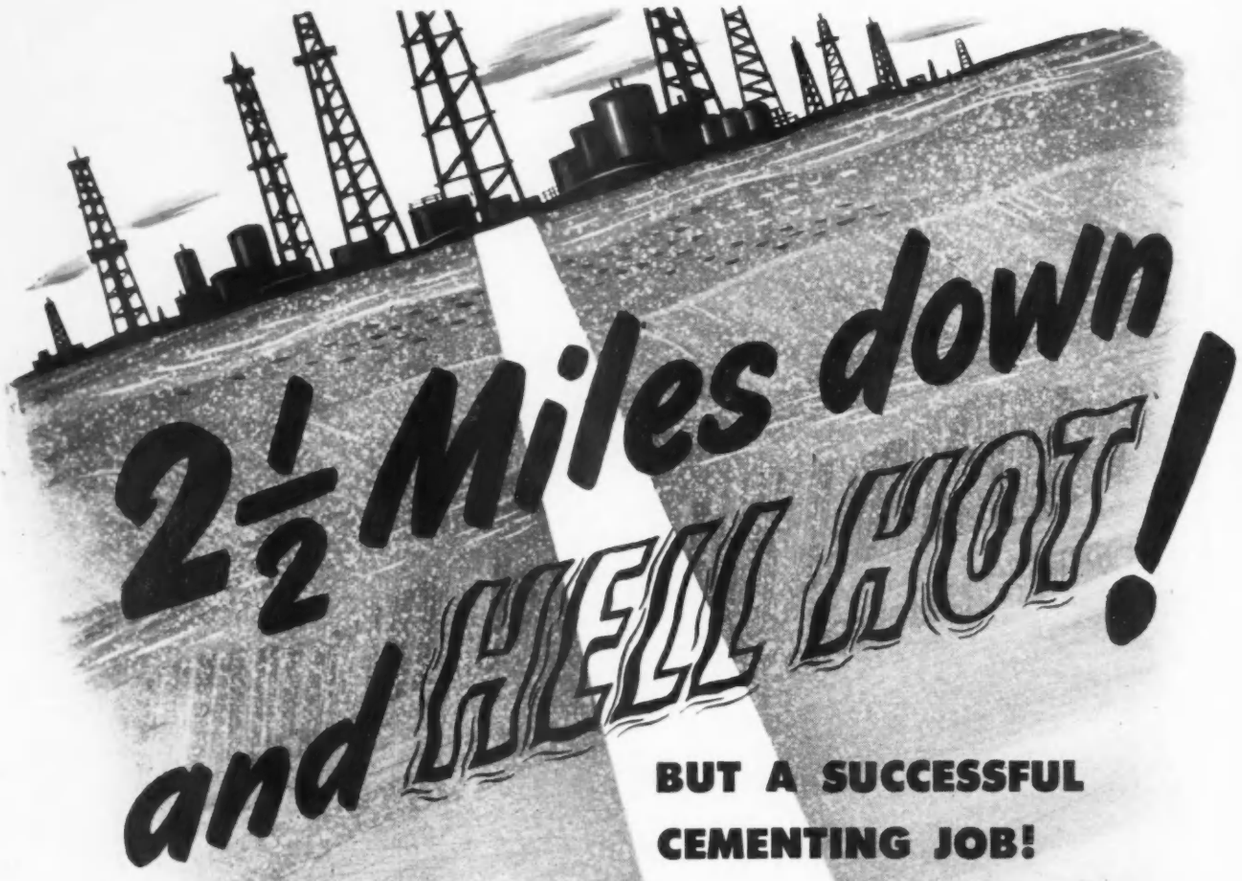

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THE OIL WEEKLY

ENGINEERING • NEWS • STATISTICS

Published by THE GULF PUBLISHING COMPANY, Houston, Texas

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Published Every Monday. Single Copies 15 cents (Except Special Issues). Subscription price: domestic and foreign, $2.00 a year; 2 years $3.00. Advertising rates on application.
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LOOKING AHEAD
... with the Editor

SINCE the inception of the industry, disposal of salt water has been one of the most troublesome and costly producing problems. In recent years the industry has commenced using the injection disposal system, in which the brine is put back in the ground. Two methods of injection disposal have been developed. First the so-called "open system" and, second, what is referred to as the "closed system."

Next week an article by I. W. Alcorn, division engineer for The Pure Oil Company, will discuss these two methods. Author Alcorn has installed two of the newer and less-widely publicized "closed disposal systems." The operation of these two installations causes him to conclude that where the closed system can be used, it is desirable from the standpoint of low initial cost and minimum maintenance cost. The latter due primarily to minimizing of corrosion.

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The Changing Panorama

Stocks Drop Despite Higher Production

ALTHOUGH crude-oil production has risen sharply in recent weeks, the industry is experiencing more difficulty in meeting demand than in the early part of the year. Despite the larger output in July and to date in August, crude oil stocks surprisingly have failed to continue the growth that marked their trend during the first five months of the year, and instead have been reduced materially. Meanwhile, stocks of refined products, especially gasoline, also continue to decline. This situation reflects an unusually large increase in the consumption, and constitutes another warning that the industry may experience extreme difficulties in producing enough oil to meet requirements in the future.

A total of 12 million barrels of crude oil went to storage during the first five months of the year, stocks rising from 233 million to 245 million barrels. During this time daily average production was climbing from around 3,825,000 barrels to 3,970,000 barrels. Since that time (week ended May 29) 8 million barrels of crude oil has been taken from storage, although producing rates have bounded upward from 3,970,000 to 4,100,000 barrels daily in July and to over 4,200,000 barrels in August. There has been only one week since May 29 when drafts on crude oil stocks have not taken place. This was during the week ended July 31, when a hurricane retarded runs to stills at several Texas Gulf Coast plants. The sharp reduction of crude stocks, despite equally sharp gains in production, are shown in the accompanying table.

During the same period (since May 29) gasoline stocks have dipped sharply. Inventories of gasoline on May 29 stood just under 84 million barrels, and were down 11½ million barrels to 72½ million barrels on August 14. Distillate fuel stocks have gained but slightly, advancing 4 million barrels to 36½ million barrels, and residual fuel stocks have dropped a million barrels to 66½ million barrels.

Crude Production and Stock Trends

WEEK ENDED	Daily Crude Oil Production	Crude Stocks End of Week
May 29	3,970,000	245,752,000
June 5	3,932,950	245,107,000
June 12	3,987,800	244,720,000
June 19	3,966,150	243,516,000
June 26	3,954,000	242,657,000
July 3	4,007,800	240,927,000
July 10	4,090,250	239,091,000
July 17	4,103,100	237,440,000
July 24	4,118,700	237,279,000
July 31	4,133,300	238,420,000
August 7	4,202,600	237,382,000

Oil Gets Another Public Smear

THE need for a petroleum industry public relations program was demonstrated again last week, when oil was given another harmful and dangerous public smear. It is time that the public be told some of the contributions the industry has made to the war effort, and time that it begins telling the public of its problems and needs. Otherwise, the public will continue misunderstanding and mistrustful, with the result that the industry will stand in danger from a distorted public opinion.

Admitting that he is "not an economic expert," Norman Jay, Philadelphia commentator employed by an advertising agency handling the Royalist cigar program, broadcast weekly over Station WMAL, Washington, told the Capital audience August 16 that the proposed price increase for crude would handsomely enhance the profits of the big oil companies at the expense of the consuming public.

In an "open letter" to Ickes, Jay said the argument that an increase was necessary to overcome an imminent shortage of productive capacity and provide an inducement for greater production "sounds like double-talk to most of us who know that the profits of most oil-producing companies have always been fabulous—and from what I understand, are at this very moment at their highest peak in years."

"Do you mean to tell us Mr. Ickes, that these oil companies have to be pampered by the assurance of even greater profits in order to provide them with an incentive to produce more oil and gasoline?" he continued.

"If that's true, something is rotten somewhere along the line. Because fattening up these babies at the expense of an already overburdened and overgouged public just doesn't make sense."

Jay summarized the arguments of the OPA Labor Policy Committee statement of August 10 opposing the increase (THE OIL WEEKLY, August 16), but did not refer to the fact that the committee later issued an admission that it was not officially a part of the price agency and spoke only as the representative of labor. Nor did he refer in any way to the part of the small independent operator in exploration, but devoted his entire attack to the big companies and bore down heavily on the popular theme that the increase would raise gasoline and oil prices to the public.

"I'm writing you this letter, Mr. Petroleum Administrator, on behalf of those of us whose interests you are supposed to protect, to ask you to put these oil producers in their proper places," he concluded. "Make them understand that our boys are not being asked to risk their lives on the battle fronts in order for some of us here at home to grab more and more profits.

"Tell them the party is over, Mr. Ickes, and make them come down to earth and dig down into the earth a little deeper to bring up the essential black gold which our fighting forces need so badly.

"They ought to be proud of the privilege which is theirs to serve their country in its hour of need—and they ought to do it without thinking of making even greater profits than they already are so handsomely receiving."

Anyway, 59-Cent Dollars Work

A MAGIC formula has been offered by a Midland, Texas, economist, whereby the oil industry would get the long-sought crude price raise in fact but not in name and whereby there would be at the same time a great boost in the nation's crude reserves. The suggestion was made in a letter to Russell Brown, general counsel of the Independent Petroleum Association of America.

The formula is simple: reduce the standard size of a barrel of oil from 42 to 30 gallons, and leave crude postings unchanged. Automatically, the market advance that has been sought will be effected. The industry will get as much money for less oil, and the OPA will have the satisfaction of having "held the line."

At the same time, the present oil reserves of about 20 billion barrels would jump to 28 billion—a gain of 8 billion barrels.

Some one has expanded upon this suggestion with an explanation of how 42 gallons came to be the standard volume in a barrel. In the early days of the industry in Pennsylvania, the standard size was 50 gallons. But without tops on them, the barrels were loaded onto

wagons, and on the rough roads, the oil would slop out. Oil men estimated that an average of 8 gallons out of every barrel was jolted out in transit. Therefore, they deducted the 8 gallons and made the standard capacity 42 gallons.

It was not added whether or not this was the beginning of the use of road oil.

Can Use Ratings to Get Repair Service

PREFERENCE Rating Regulation No. 3 as amended on August 10 should make it easier to get machinery repaired. The regulation provides that blanket MRO ratings may be assigned for specific repair parts and to secure the use of facilities for repair purposes.

Thus, the oil industry may use AA-1 ratings authorized by P-98-b to obtain facilities for repair of machinery and equipment. These ratings may be used even if a job does not involve delivery of repair parts. In other words, ratings may be applied to secure the facilities of a repair shop.

Misuse of Technicians In Armed Service

WHILE War Manpower Commission officials are compiling a list of supercritical occupations to be given special consideration by draft boards, they might well give some thought also to a situation which cannot be classified other than a waste of manpower, whether it be willful or not, namely the misuse of technical men in the armed service.

There now exists a dangerous shortage of skilled men, notably geologists and geophysicists in the oil industry. Exploratory operations are due to be hampered because of too few men to make up crews. Such a condition strikes a blow at one of the most vital of all industries essential to fight the war.

An estimate, borne out by a few figures, is that probably two thirds of the geologists and geophysicists in the armed services have been assigned to some duty where their previous technical training is being utilized. The other third are doing routine, unskilled duty. For example, here is the story of three geologists who have been in the army from six to nine months: One is an instructor in a regimental literacy school (chosen for the assignment because he taught two years of elementary school several years ago); one is working at such duties as barracks orderly and kitchen police; and the third is being given a course in civil engineering under the army specialized training program. Each has been classified in limited service by the army, but their physical defects did not impair their work as geologists before they got in the Army. In each case the employers of these men exerted every effort to obtain deferment for them, but were unsuccessful.

Would it not be sensible for War Manpower Commission to work along the lines of trying to see what might be done to put such men back where they are so desperately needed, and where they might serve in a capacity befitting their training and experience? In view of the shortage of petroleum geologists in the oil industry, it appears that some arrangement might be made whereby such men as those mentioned above could be placed on reserve status and released to their former jobs.

It would not be stretching the idea too far to suggest the advisability of a review of the assignments of geologists now in the armed forces to determine what use is being made of their technical training. If one third of such men are doing routine duty, undoubtedly a mistake has been made in such assignments. The manpower shortage in certain branches of the oil industry is likely to become so acute that any source of available men, no matter how small, should be explored to the utmost, and waste of manpower resources ought to be eliminated all up and down the line, in high places as well as low.

Oil Is Influencing Argentina's Attitude

WASHINGTON'S cold shoulder to feelers from Argentina concerning that country's proposed oil deal may have a decisive influence in bringing that isolationist republic to a common stand with other South American countries as far as the Axis is concerned.

Under the proposal, the United States would be called upon to ship some 30,000 tons of oil-drilling equipment to Argentina. Argentina, in turn, would deliver 360,000 cubic meters of oil to Uruguay, Paraguay, and Southern Brazil. Benefits to the United States would be the release of half a dozen tankers now engaged in delivery of oil to the three countries mentioned.

Argentina is apprehensive over her oil situation, and rightly so. Fuel oil supplies have deteriorated to such an extent that only about half the normal requirements will be filled this year. In the face of sharply increased industrial requirements for liquid fuel, imports have virtually ceased and domestic production has begun to decline. Estimated petroleum production in the first quarter of 1943 dropped to about 77 percent of the corresponding 1942 level. Output is certain to suffer further in the months ahead unless drilling equipment is obtained, both to bring existing wells back into production and to drill new wells.

In the light of Argentina's new president's leanings toward totalitarian doctrines and his action in sticking with the Axis, so far, there seems little reason why the United States should consider the oil proposal, or any other, for that matter, with such a government. If he is cleaning up at home first, as some Argentineans believe, and does finally show the right attitude toward North and South American solidarity, there will then be time to consider his oil proposal.

Is There Too Much Talk of Post War?

IF RECENTLY publicized slumps in production curves of certain war factories are due to over-optimism of war workers, it's time to look for a deeper reason for this complacency than battlefield victories. Something more subtle than optimism is to blame. And it could be that too much talk is going on about post-war. Post-war planning, post-war developments, post-war jobs, post-war houses—just a few of the post-war diversions being put before the people, over the air and by publications consistently.

We would not belittle any effort to plan for tomorrow. That is essential if we are to make the most of opportunity. However, to broadcast what is being done at this time is dangerous. It distracts attention from the main issue; takes the eyes off the ball. And the ball in this instance is the winning of the war, unequivocably, decisively, and as speedily as possible. Anything that hampers or slows down our efforts in this respect is inexcusable, entirely off the beam, and should not be permitted. It does not make sense to pause in the middle of a hurricane and speculate on what a bright day is ahead, especially if obliteration is threatened by the gale.

The accomplishments of our fighting men are cause for rejoicing and constant thanksgiving. So are the amazing achievements on the home front. But for a lesson in humility, take a look at the globe and try to visualize what is yet to be done before we can claim total victory.

OIL IS AMMUNITION

FOR THE INFANTRY, TOO

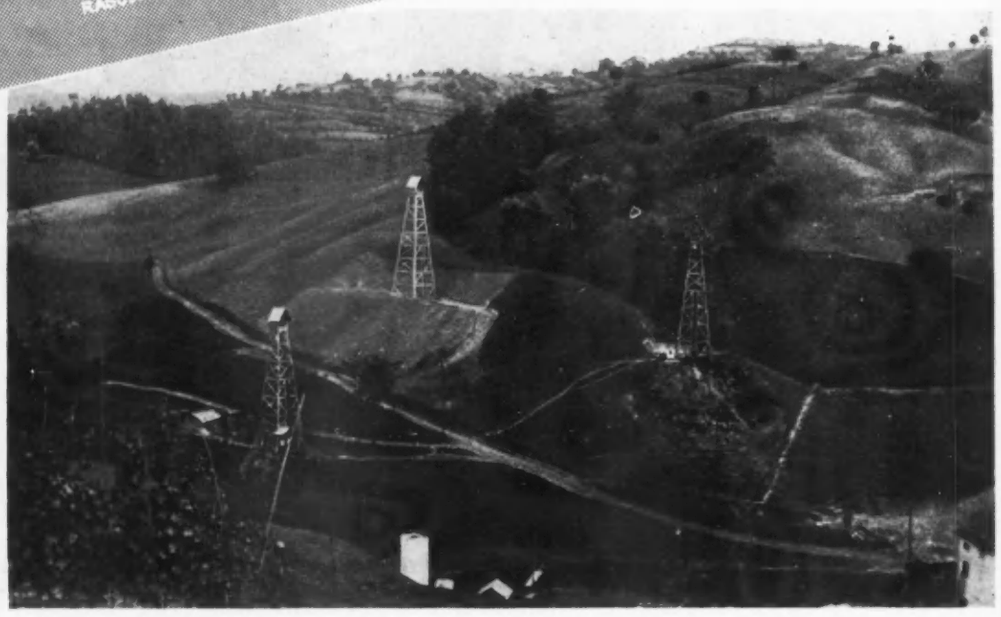
Oil use is generally thought of in connection with the operation of mechanical devices and machines. However, its use is by no means so limited. Oil even plays an important part in the life of an infantryman, keeping both him and his equipment in fighting trim on the firing line.

To keep his rifle shooting, a soldier uses special lubricants to reduce gun-barrel gumming. The hand grenades he hurls at the enemy contain explosives made from petroleum.

His shoes are soled with synthetic rubber made from petroleum, and are treated against chemical gases with material from oil refineries. He shines his boots or shoes with polish consisting partially of wax supplied by oil. His uniform is better because of a special wool-treating oil used in the manufacture of clothing and blankets. His raincoat is made water repellent by treatment with petroleum products. The tent in which he sleeps, his leggings, his barrack bags, his canteen bag, and numerous other items are made waterproof, flame resistant and mildewproof by means of petroleum products. His gas mask is made from synthetic rubber. Salves, lotions and other medical preparations speed his recovery when wounded, and cure and prevent athlete's foot, while insecticides made from oil kill germ-carrying insects that might cause epidemics in time of war.

Oceans of Oil Needed
YOUR JOB IS VITAL FOR VICTORY

Italian Oil Fields Small... But Important To Axis



Tabiano oil field, near Fidenza, Italy, operated by Societa' Petroli d' Italia, subsidiary of Standard Oil Company of New Jersey.

THE oil fields of Italy and Albania are comparatively small and unimportant. But for the oil-thirsty Axis of Europe, they are needed; and if and when they fall into the hands of the Allies, the already serious Axis problem of obtaining enough oil for war-waging will be made a little more serious.

Albanian production of crude oil is believed to have been running around 3700 barrels per day, from about 550 wells, in the Devoli field, equivalent to about 7 barrels daily per well. The oil is around 16 gravity, and comes from depths of 2000 to 3000 feet.

Production in the several small fields of Italy has been altogether only about 125 barrels per day, the output of wells being measured in many cases in liters. Nearly all the Italian production is from fields in the north part of the country, in the region of the Po River, between Milan and Bologna.

Among the American petroleum geologists who have studied the oil areas and oil possibilities of Italy is J. Elmer Thomas, of Fort Worth, who has kindly furnished for presentation here some basic information on Italy and Sicily and also some photographs of Italy's oil fields, all of which he visited about 12 years ago. At that time, he visited not only all the producing areas but also every point where a showing of oil or gas had been reported, from the valley of the Po in Northern Italy to the Southern shores of Sicily.

In general, the Italian wells are shallow and small, producing for the

Valleza oil field, near Parma, Italy. Owned by Societa' Petroli d' Italia, subsidiary of Standard Oil Company of New Jersey. Located south of the Po River, in the foothills of the Apennines.

most part, a very light gravity crude. A half dozen of these fields occupy the foothills of the Apennines on the south side of the Po valley, principally in the province of Emilia, south of Parma and west of Bologna. The total production of the whole country was around 600 barrels per day for several years in the early 1930's, but output subsequently has declined.

The oil occurs in fractures, or sand lenses, or blocks of sandstone occluded in a very peculiar formation, which the Italians call Argille Scagliose, or scaly shales. Variegated shales would be a better term, as they are characteristically mottled in bright reds, greens, and browns. It is the original heaving shale, as it is highly fluid when wet, and it has been observed to be intruded in joints, bedding planes, and the broken crests of anticlines, much as molten lava would do. The formation is probably of Eocene age, or possibly occupying a transition zone between the Cretaceous and Eocene, although no locality was found where its upper or lower contact was exposed. Blocks of rock, bigger than the largest buildings, were observed by Thomas, being of ages varying from Cretaceous to Pliocene, "floating around" in this sea of mud cocked around at all angles. "It makes highly picturesque topography but a geologist's night-mare," declared Thomas. Apart from these small oil wells in Emilia, there was a single field with about 20 wells half way between Rome and Naples which produced a heavy crude.

In Albania, several areas were reported to show heavy crude, in addition to the Devoli area where substantial production subsequently was developed, amounting to several thousand barrels per day.

"Prospect hole" at asphalt mine near Ragusa, Sicily.

Asphalt in Sicily

At Ragusa in Sicily is located the second largest asphalt deposit in the world, second only to Trinidad Lake, although at Ragusa it occurs in impregnated limestone, something like the deposits near Uvalde, Southwest Texas. The surface appearance in the Ragusa vicinity is somewhat reminiscent of Pecos County, West Texas, and there are untested anticlines of sizeable proportions nearby.

There are numerous oil and gas seepages in Sicily, nearly all of them associated with the Argille Scagliose. Almost invariably a shrine has been erected near these seepages, possibly because the oil had been found to have curative properties, although some of these seepages yielded no more than a cup of oil per day. In Germany there has been noted also this same tendency to erect a shrine at an oil seepage, however minor, one such shrine being at least 500 years old.

Petroleum Industry Has Entered a New Phase

Lower finding rates, higher prices, greater dependence on imports, and shift of refinery yields to more expensive and indispensable products can be expected. Changes will not curb use of more essential products, nor retard the continued growth of petroleum as a source for chemicals.

By BENJAMIN T. BROOKS, Petroleum Technologist

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THE American petroleum industry has entered a new phase of its existence characterized by: (1) a decreased rate of finding of new oil fields, which rate of finding has been less than annual consumption since 1937 and which in 1942 amounted only to about 20 percent of consumption, (2) change from an oil-exporting nation to an oil-importing nation, although at present, owing to the exigencies of war, we are exporting petroleum products to our allies and to our armed forces. By stringent domestic rationing of gasoline and other products, by withdrawing oil from certain fields at rates in excess of their critical rate of production, and substantially lowering the above-ground storage, we have been able to maintain production at about 4 million barrels per day and we should be able to continue to do so for the duration of the war, although E. L. De Golyer,[4] Deputy Petroleum Administrator, stated recently, "Without new discoveries our productive capacity will be inadequate by the end of the year." The significance of this statement lies in the fact that about half our current production has come from new fields and half from old settled production, and that although known reserves are estimated to be about 20 billion barrels, oil cannot be produced from existing wells, without continuing discoveries, at a *rate* which will meet the demand. Damage to producing fields by overproduction will accentuate the shortage after the war and increase the deficiencies which we shall have to make up by imports. This new phase of the industry will have far-reaching consequences to refinery technology and the uses of petroleum products, inevitably bringing higher price structures. Every industry, every financial institution, every user of petroleum products will be more and more concerned as the domestic shortage of petroleum develops further.

When, in 1936, the writer and L. C. Snider[13] forecast a domestic shortage of petroleum as likely to occur in 5 to 8 years, owing to decreased rate of oil finding, we pointed out, "The problem as to whether or not the United States can produce enough petroleum to supply its own consumptive demand at any assumed demand rate and under any assumed price structure lies principally within the field of the geologist. *The demand and price structure will depend on the methods of utilization and on the degree to which other substances may be substituted, at different price levels, for petroleum and its products. The alleviation of a petroleum shortage presents a series of problems of better utilization and the development of substitutes, the successful solution of which depends almost entirely on the efforts of chemical engineers.*"

The uncertainty of continuing to find oil adequate for our needs and the apparent imminence of domestic shortage have lurked in the minds of some for many years and this fact has already profoundly affected our petroleum technology. It was such a fear that initiated the successful development of the cracking process, without which we would not have had a supply of gasoline adequate for our needs, or in any case equal to the amount we have actually enjoyed, from crude petroleum alone since about 1915. It was the same fear of imminent shortage which prompted Standard Oil Company of New Jersey to acquire the high-pressure-hydrogenation process and other processes from German interests in 1929.[9] As further improved by the chemical engineers of that company, the process can be applied to the complete hydrogenation of heavy oil residues or a flexible combination of hydrogenation and cracking as described by Russell, Gohr, and Voorhees.[12] This is one of the methods which may be applied in alleviating a domestic petroleum shortage.

Yet some chemists have objected strenuously to any discussion of this subject for one or more of the following reasons: (a) denial that there is a shortage or that a shortage is imminent; (b) that the matter is "controversial"; (c) that the question of shortage or seriousness of the shortage is a matter exclusively for the petroleum geologist; (d) that the implications are sensational and should not be made public; (e) that finding new oil is merely a question of increased wildcatting; (f) that oil is being formed in Nature at a rate faster than we are consuming it and that all we need to do is to find it; (g) that questions of supply and changes in the technology of the industry should be left to management, not discussed by chemists; (h) that any publicity regarding the facts or their implications should come from a kind of policy committee, or public relations committee of petroleum executives.

As recently as the April 1943 meeting of the American Chemical Society, the fact of a domestic shortage of petroleum was vigorously denied by some, to the exclusion of any comment on the probable effects of continuing shortage. Although the subject of the present discussion is the probable effects of a domestic petroleum shortage in the United States, it seems advisable, in view of continued denial of the facts, to review merely a few of the latest developments. For an explanation and fuller discussion of the causes of our present shortage, reference may be made to two earlier papers on the subject by L. C. Snider and the writer.[13] The decreased rate of oil finding is shown in an accompanying graph which is reproduced from a recent article by Harold L. Ickes.[10]

Ickes states: "When our petroleum reserves *and imports* are inadequate, describes a time which may be far less distant than even the better informed have foreseen. Yet it is a phrase which is certain to provoke incredulity. It will even call for ridicule from the many who are

somewhat less than well informed... In the United States, *where the delusion of inexhaustible oil resources lingers tenaciously*, we have been able, so far, to make only a gesture toward solving the liquid-fuel problems that inevitably will be ours if additions to our known reserves keep on diminishing at the present rate, to say nothing of the difficulties we may encounter if that pace becomes accelerated." Ickes gives statistics which show that 98.8 percent of our known fuel reserves are coal, 0.86 percent oil shale as yet entirely undeveloped, and 0.17 percent petroleum.

This graph of oil in new pools should be considered in the light of present demand, which is at the rate of about 1.5 billion barrels annually. However, recent studies of existing fields have considerably increased the estimates of reserves—i.e., the total ultimately producible oil—but as pointed out earlier these estimates will have to be revised downward considerably if these fields, or many of them, are damaged by overproduction to meet war requirements. Before the present oil-finding situation had become so acute, in 1939, R. E. Wilson[10] testified, "If you had strict engineering principles applied to all oil fields, you wouldn't have enough oil to supply the refineries." Very recently D. R. Knowlton,[10a] director of production of PAW, stated: "Today every oil-producing area in the United States except the Texas Gulf Coast and West Texas is producing close to or in excess of its maximum efficient rate." In April, 1943, R. W. Gallagher, president of Standard Oil Company of New Jersey, stated in that company's annual report, "The limited success of our own recent search for new reserves in the United States seems to have been paralleled by that of the petroleum industry. There is a growing awareness that discoveries of new oil fields in this country have failed to keep pace with the demand of the last few years. Both government officials and industry spokesmen have voiced concern on this score, and there is wide recognition of the need for additional assured sources of supply against the future requirements of the nation.

"From the beginning of the industry the oil fields of the United States have supplied upward of 60 percent of the world's oil. It is unlikely that this country can maintain this record much longer. The postwar world will draw more largely on other sources."

A few months ago E. L. De Golyer, Deputy Petroleum Administrator, stated that in his opinion the United States would never again be an oil exporting nation. De Golyer[5] recently published the following significant data, Table 1, which should be considered together with the graph given by Ickes.

These figures refute the comment sometimes heard that the present low rate of oil finding has been due to a decrease in wildcatting.

Also writing of this situation, L. F. McCollum,[11] vice president of Standard Oil Company of New Jersey foreign producing companies, stated: "This raises the doubt that our prospecting territory still holds hidden fields of large magnitude . . . It would appear from this chart that the major factor influencing this decline in discovery rate is neither the material shortage, the manpower shortage, nor the price of crude oil . . . In other words our finding field is becoming sterile from being constantly ploughed over."

Decrease in Rate of Oil Finding

TABLE 1
Results of Exploratory Drilling

YEAR	Total Wildcat Wells Drilled	Successful Wildcats	Number of New Fields Discovered	Total New Reserves, Million Bbl.	Discovered Per Field, Million Bbl.
1934	....	...	86	1,699	19.7
1935	....	...	104	1,934	18.6
1936	....	...	104	1,894	18.2
1937	2,224	222	148	2,119	14.3
1938	2,638	294	166	1,894	11.4
1939	2,589	224	170	943	5.6
1940	3,038	302	217	945	4.3
1941	3,264	503	209	361	1.7
1942	3,045	493	261	317	1.2

TABLE 2
Foreign Countries in Which Oil Production Can Be Expected to Increase Substantially
(In the Probable Order of Their Importance)

COUNTRY	Production in 1939[a] Barrels
Russia	212,500,000
Venezuela	205,956,000
Iran	78,151,000
Iraq	30,791,000
Bahrein Island and S. Arabia	7,589,000
East Indies	61,580,000
Mexico	42,779,000
Colombia	22,037,000

[a] Source: American Petroleum Institute, Facts and Figures, 1941.

Confusion of Opinion

It is not to be supposed that the present situation has not been foreseen by many of the better managed companies and their technical advisers, although there seems to have been a carry-over among many others, including a few chemists, from the earlier days when many reasoned that since we had always found plenty of crude petroleum, therefore we always would. As one well-known executive stated, "Kind Providence never limits the supply of anything as valuable as petroleum." Yet up to now the only industrially important nations that have enjoyed supplies of petroleum within their own borders adequate for their needs have been the United States and Russia. This at once suggests many questions of world politics which are outside the scope and purpose of the present discussion. However, the increase in foreign exploration and production by a few American oil companies has been very marked in the last 15 years, particularly in Iraq, Bahrein Island and S. Arabia, Venezuela, Colombia, Mexico, and the East Indies, and in many other countries where oil in commercially producible accumulations has been found to be either relatively unimportant or nonexistent.

All these countries, particularly Russia, contain important partially developed oil-producing areas. The magnitude of their reserves is not accurately known, although the reserves of Russia, Iraq, and Iran are believed to be relatively very large.

The geographical shift in our domestic production and the depletion of older areas are shown in Table 3, showing that on the basis of the record through 1940

most oil-producing states have passed their peak of production. Also important refineries of considerable capacity have been built abroad by American companies, in France, Rumania, Sumatra, Aruba, and Bahrein Island.

Notwithstanding the national and military importance of our total national petroleum reserves, the desirability of being independent of imports in time of war, and the great financial investment in the petroleum industry, no very thorough study of our national reserves was ever made until very recently, with the possible exception of an estimate made in 1921 by geologists of the American Association of Petroleum Geologists in cooperation with the United States Geological Survey. Their estimate for proved reserves was 9.1 billion barrels, whereas our interim production through 1942 has been about 20.5 billion barrels. In 1935 a figure was widely published and generally accepted for our proved reserves as of 1933. It was published by the American Petroleum Institute and elsewhere and credited to the United States Geological Survey and seemed authoritative. This figure was 13.25 billion barrels and was an estimate given in testimony before the Cole Committee by H. B. Soyster of the United States Geological Survey, who was careful to point out the probable inaccuracies[15] of the estimate. By inquiry in Washington it was learned that this estimate had been arrived at by a former employe of the Petroleum Administrative Board who told me that about 60 percent of the oil companies had replied to a questionnaire regarding oil reserves and he had roughly assumed that the total figure so obtained might be 60 percent of the total reserves.

Another estimate made in the same way a year later gave 10.7 billion barrels, although it was generally known that the reserves had increased. In 1936 Dr. J. W. Finch, Director of the Bureau of Mines, stated that he considered that a fair and proper study and estimate of our national petroleum reserves was entirely beyond the facilities and funds of the Bureau of Mines, but agreed that such an impartial study would be of the greatest importance. In recent years the American Petroleum Institute has had a committee studying the matter and still more recently the Petroleum Administration for War has had a committee under W. B. Heroy at work on the problem. Commenting on Heroy's recent report, Deputy Petroleum Administrator Ralph Davies[3] stated: "This is the first time that a federal government agency has ever made a survey to determine the actual amount of new proven oil reserves discovered in any one year."

Many individuals and organizations speaking for the oil industry have appeared to resent any discussion of the subject. In December 1924 the President of the United States appointed four members of his cabinet to conduct a comprehensive study of present and potential petroleum resources of the United States. The Federal Oil Conservation Board thus created later submitted three reports, the first dealing with general petroleum conditions in the United States, the second with possible petroleum substitutes, and the third with a general world-wide survey. In 1925 the American Petroleum Institute published the report of its Committee of Eleven.[2] This report considered the major reserves to be in undrilled areas, pointing out that "about 57 percent of the total area of the United States is such that new oil fields may be discovered in it." The committee included in this territory as favorable for the discovery of oil about 92 percent of North Dakota, 90 percent of South Dakota, 100 percent of Nebraska, 45 percent of Missouri, 96 percent of Iowa, 66 percent of Alabama, 55 percent of Georgia, 100 percent of Florida, and substantial portions of South Carolina, North Carolina, Virginia, Maryland, Delaware, and New Jersey. No commercial production has been discovered in these particular areas up to this time although many geologically favorable structures have been drilled. The vast extent of these supposedly favorable areas probably gave an unintended false impression of security with respect to future oil reserves. The committee also expressed the opinion that after commercial production by the then known practices had ceased, at least two thirds of the oil originally present remained in the ground, and that this oil might be produced by to-be-discovered methods of secondary recovery or even by mining. The estimate of oil left underground, used by the committee, has since been shown to be erroneous. The committee also listed an estimated 108 billion barrels of shale oil as producible from our shale, 525 billion barrels of "liquid products" producible from our coal deposits (including 92 billion barrels of motor fuel), and an additional 70 billion barrels of "liquid products" from lignite deposits. It need hardly be pointed out that shale oil and "liquid products" from coal are not petroleum but are petroleum substitutes, the manufacture of which would require a vast new mining and processing industry possible only at much higher price levels for all the usable products. Whatever the purpose of the report, the general effect has been to build up a false feeling of security as to the sufficiency of our petroleum supplies in the immediate future.

TABLE 3

Production of Crude Petroleum in the United States by States Showing Year in Which Peak Production Was Passed

(Source: U.S. Bureau of Mines and Oil and Gas Journal, Jan. 28, 1943.)

STATE	Peak Year	Production in 1942 Barrels
Texas	1937[a]	474,935,000
California	1923	248,395,000
Oklahoma	1927	136,761,000
Illinois	1940	103,282,000
Louisiana	[b]	128,231,000
Kansas	1937	96,879,000
New Mexico	[b]	32,999,000
Wyoming	1923	32,736,000
Arkansas	1925	26,566,000
Michigan	1939	21,537,000
Pennsylvania	1891	16,841,000
Montana	[b]	8,045,000
Kentucky	1921	4,607,000
New York	1882	4,968,000
Indiana	1903	6,620,000
Mississippi	[b]	27,545,000
West Virginia	1900	3,492,000
Ohio	1896	3,384,000
Colorado	1927	2,309,000

[a] The record for Texas shows a peak in 1937, but this figure probably will be exceeded.
[b] Production still increasing and peak probably not yet reached.

In 1936 the United States military journal *Arm* ...*e* published the Snider and Br ...*e* on probable petroleum sh... in the following issue a reply ...al committee of the American P...eum Institute was published.[1] The reply was very general and reassuring but none of the facts brought out in the prior article were denied.

Chemistry of Oil Origin and Geographical Distribution

The Committee of Eleven of the American Petroleum Institute was assisted by a number of experienced petroleum geologists. That much of the territory listed by them as favorable for the discovery of petroleum has since been drilled and no oil found is a fact which probably nobody could then have confidently predicted. The absence of oil in favorable sedimentary strata and structures can be explained only by knowledge as to the chemistry of petroleum origin as well as the geological history of the strata considered to be possibly oil bearing. Some geologists still believe petroleum to be a universal and normal constituent of sedimentary deposits of certain types, whereas much evidence is accumulating to prove that this is not so, at least in amounts which can yield commercial accumulation in favorable geological structures. The answer is to be found in the chemical history of petroleum origin. Further discussion of this subject is outside the scope of this article, but perhaps the most significant discovery bearing upon this question was the finding, by Treibs,[16] that oil shales, asphalts, and asphaltic oils generally contain chlorophyll porphyrins, a fact throwing a great deal of light not only upon possible source material but definitely on the physical conditions at the time of deposition.

The question of petroleum origin has heretofore been considered essentially as

an academic question but is now believed by many to have a direct bearing upon the finding of oil.

Rate of Oil Formation

In this connection it may be noted that a commentator, in denying the significance of the facts regarding the increasing difficulty of finding new oil in the United States, has apparently seriously suggested that "petroleum is now being formed at a *greater rate* than our consumption of it and that all we have to do is to find it."[6] The same writer states, "In view of the increasing volumes of crude oil reserves, the probability of *continuous crude oil formation,* better utilization of crude oil and its products, and considering the trifling volume of petroleum used to date, *one can look with assurance as to the future oil supplies for our every need for thousands of years.*"[7] Since the theory has been seriously advanced, it deserves to receive some consideration.

Although it may confidently be assumed that the processes of nature, including oil formation, are still in progress, petroleum geologists and chemists are not at all agreed as to the manner of petroleum origin, not to mention its rate of formation. However, if we are to benefit by its current formation, as suggested, we must assume that it is still taking place in the United States or on the ocean bottom or both. If in the United States, and "all we need to do is to find it," then it might be assumed that the rate of formation in the past has not been greater than our present rate of consumption but merely equal to it. Since our geologically oldest important oil accumulations are found in the early Ordovician, which radioactive mineral studies date as about 400 million years old, then there should be somewhere in the United States something like 600 billion million barrels of petroleum, or on a Btu basis about 53,000 times our total coal reserve, instead of the 0.17 percent as given by Ickes.

On the other hand, if the current rapid rate of oil formation is taking place in diatomaceous deposits on the ocean floor as the article in *Science* seems to suggest, then if it is to be available to us we evidently must either invent a method of exploring the ocean floor for favorable geological structures and a method of drilling in the great expanses of the oceans, or else await the elevation of new continents before we can recover the oil.

It is fairly obvious that continuing and increasing dependency upon imported crude to make up our deficiencies will favor refineries located on tide water.

None of the probable changes in refinery technology and uses of petroleum products will be immediate in the sense of a sudden dislocation. As said several years ago, the first change of importance will be increasing imports, and when the present war ends and imports from Venezuela and elsewhere are resumed we should be able to meet all our domestic demands for several years. But as we have to go farther afield for our imports and as other nationals appreciate our need, we can confidently expect to pay more for it, probably all the traffic will bear. Latin American countries, such as Venezuela and Mexico, feel that they should profit more than heretofore from their petroleum. In increasing the royalty tax in Venezuela recently, from an average of 10 to 16 2/3 percent, it was stated that this was about as high a tax as possible at present without injuring the industry. In Mexico oil production is almost wholly in government hands. In Iran Anglo-Iranian Oil Company has had to revise upwardly its payments to the Iranian government several times. The world may possibly be kinder to us than after the last war, but in 1934 David White of the United States Geological Survey reported to the Cole Committee,[8] "The diplomatic procedure of other nations, even our allies, in acquiring foreign petroleum reserves to the secretly arranged exclusion of our nationals was not without effect on the companies as well as the administration" (of President Coolidge). R. W. Gallagher showed some concern as to such possibilities when he stated in the annual report of the Standard Oil Company of New Jersey, "The welfare of the world after the war will make it imperative that these (foreign) untapped reservoirs of energy be made available to society, world wide. A wise foreign policy on the part of our own government will take into account, along with our own national requirements, this world need for the development of new sources of oil supply."

Increased Difficulty for the Small Refinery

The struggle for oil reserves by those American companies which have had the foresight and the necessary financial resources has tended to accumulate most of our reserves in relatively few hands. Likewise the development of foreign fields has been mainly by a relatively few strongly financed companies. Since these companies naturally intend to stay in the oil business, increasing domestic shortage and growing dependency upon imports will probably tend to hasten the elimination of the small refinery. There are of course other factors which tend in this same direction. Aside from the question of disadvantageous location, the increasing technological complexities of the refinery, many brought into use during the present war, definitely handicap the small refinery. The general economic advantages of large refinery units as compared with small units are well known. Many of the newer processes require careful chemical control and supervision; it takes as many chemists and specially trained operators to run a small sulfuric acid alkylation plant as it does one ten times as big. In general, domestic shortage of crude, though bringing higher prices for both crude and products, will call for a more complex refinery technology to get the most out of a barrel of crude and to meet the more severe demands of more economic utilization of petroleum products. As a rule, the growing chemical utilization of refinery by-products is possible only in plants of relatively large capacity. Thus, the new phase of the petroleum industry will probably accelerate the elimination of the small refinery, directly by difficulties of crude supply and indirectly through many technological disadvantages stemming merely from small size.

Petroleum Substitutes

When petroleum prices have reached a level sufficiently high to make the manufacture of shale oil profitable the nature of such undertakings will almost certainly require operations on a very large scale. The United States Bureau of Mines stated in the second report of the Federal Oil Conservation Board (1928), "Only those companies that are strongly financed and well managed could hope to succeed in an industry whose existence is likely to depend on a large daily throughput and a small profit per ton of shale . . . the small oil-shale operator would doubtless find it practically impossible to compete with the low costs of mining and retorting that could be realized only by large-scale operations."

All known petroleum substitutes cost considerably more to manufacture than the average value of petroleum since the infancy of the industry. Although the costs of the Scotch shale oil industry obviously cannot be assumed to be the same as for the American shale oil of the future, in 1936[18] the mining costs in Scotland were 5 to 6 shillings per ton and the crude shale oil cost 4.5 pence per gallon (British) or about $3.25 per barrel. Some recent estimates for richer, selected strata of American deposits give a lower probable cost.[9, 17] It should be remembered that a barrel of shale oil is worth considerably less than a barrel of average crude petroleum.

It appears from recent work that gasoline can be produced from natural gas by the Fischer process, catalytic hydrogenation of water gas, in certain districts where natural gas is available at 5 cents or less per 1000 cubic feet, at a cost about equal to the cost of refinery gasoline from petroleum at $2.00 per barrel. There are few places in the United States where natural gas is available in quantity at such prices and with

TABLE 4

Comparison of Methods for Motor-Gasoline Production

	Approximate Dollar Investment Per Barrel Motor Gasoline Per Day[a]	Approximate Tons Steel Per Barrel Motor Gasoline Per Day	Approximate Gasoline Direct Cost, Including Normal Over-Head But Excluding Depreciation[b] Cents	Approximate Gasoline Total Cost, Including Normal Over-Head and 10 Percent Depreciation[b] Cents
1. High-pressure coal Hydrogenation	$12,800	14.1	15.9	22.6
2. Fischer process, European design, starting from coal	7,600	8.9	14.7	19.2
3. Fischer process, European design, starting from natural gas[c]	4,750	6.5	6.0	8.8
4. Modern high-pressure hydrogenation of petroleum[d]	1,150	1.4	4.8	5.5
Modern oil refinery:[e]				
5. Crude at $1.20 per bbl.[f]	700	0.7	5.1	5.3
6. Crude at $2.00 per bbl.[f]	700	0.7	8.3	8.5

[a] 1942 costs for complete plant, including all utility supply and auxiliaries.
[b] Octane number approximately 68-70 A. S. T. M.
[c] Natural gas at 5 cents per 1,000 cubic feet.
[d] Crude at $1.20 per barrel.
[e] Using thermal-cracking basis.
[f] Crude price at the well.

a reasonable expectancy as to continuation of supply. However, this process may become important as price levels rise sufficiently to make it profitable.

The following table from data recently given by the late W. S. Farish, former president of Standard Oil Company of New Jersey, before the Committee on Mines and Mining of the House of Representatives on July 15, 1942, is of interest as giving also the estimated cost of synthetic gasoline made from natural gas and by other processes.

Interest has recently been revived in the tar sands of Western Canada. While these deposits are extensive the recovery of the tar has not been profitable at current petroleum prices. Like shale oil, it is worth much less per barrel than average petroleum and costs more to produce. Like shale oil this tar should be considered as a possible petroleum substitute, conversion of which into usable products awaits much higher price levels.

More Efficient Utilization in Alleviating Petroleum Shortage

It is obvious that a continuing domestic petroleum shortage with attendant higher price structures will favor more efficient utilization of petroleum products. We have already gone a long way in that direction. Had it not been for the invention of cracking processes and tetraethyl lead, we would probably still be limited to low-compression engines similar to those of about 1920. The more recently developed processes of alkylation, polymerization (for motor fuel), and catalytic cracking have made it probable that motor fuel of 90 octane or better will constitute a large percentage of our common motor fuel. It is worthy of note that the petroleum industry has continually improved the octane rating and the resultant greater number of miles per gallon of motor fuel, with substantial savings in national motor fuel demand, even during years of oil overproduction and abnormally low motor-fuel prices. It is possible that this saving in motor-fuel requirement for the same average mileage and number of cars, may be as much as 25 percent less than for 1941.

The effect of higher prices, together with greater mileage value of the higher-octane fuels, will tend to preserve and even extend the auxiliary refinery processes now employed to produce high-octane special fuels for our present war needs. These auxiliary processes include alkylation of isobutane and isopentane with butenes and possibly propylene, isomerization of normal butane to increase the necessary isobutane, polymerization of olefin gases, re-forming of straight-run gasolines, and use of various additives.

In general, the changes in refinery technology and in the uses of petroleum products will be the result of a substantially higher petroleum price structure. It should be possible to do more in the way of higher octane values for motor fuel when the average bulk f.o.b. refinery price is 10 to 15 cents per gallon instead of 6 to 7 cents, particularly in the case of integrated companies which control most of their requirements of crude. Petroleum products generally have never sold for what they have been worth from the standpoint of value of service and convenience. One evidence of this has been the collection of 5 to 8 cents per gallon, or a billion dollars a year in gasoline taxes, with comparatively little protest from the consumer, and no evidence that the increased price to the consumer has curbed the use of motor fuel. A tax of 5 to 8 cents per gallon on fuel oil for heating, particularly domestic heating, probably would greatly curtail its use for such purposes.

Fuel oils, though always important in the refinery balance sheet, have usually been the reservoir of lowest value into which nearly everything went which could not be economically converted into higher value products. Cracking processes for gasoline have been the greatest consumer of fuel oils, a use which has steadily increased up to the present time. By 1936 practically all low-sulphur oils suitable for cracking were so used. Continued domestic shortage and higher prices will undoubtedly increase the diversion of fuel oils to cracking processes. It was the out-of-balance accumulation of oils of the so-called gas-oil type, as well as fear of inadequate crude supply, that stimulated the first development of the cracking process, and the inability of the Burton type of cracking process to crack the lighter lower-boiling fractions of gas oil (or kerosine) favored the tube cracking processes which supplanted the Burton type processes. The tendency all along has been to convert as much fuel oil to gasoline as possible. The maximum, in this respect, is attained by high-pressure hydrogenation which makes possible the complete conversion of fuel oils to gasoline. This does not imply, however, that fuel oils will ever disappear from the market. Refineries will probably always have sufficient residual or by-product oils, including refractory recycle oils from cracking processes to supply all our *essential* fuel-oil needs, such as for our Navy and merchant marine. However, the recently developed catalytic cracking processes tend to eliminate the distillate type of fuel oils such as the recycle oils, difficult to crack, produced by pressure-cracking processes. It is this type of fuel oil, as well as uncracked distillates, which has supplied much of our fuel oil for domestic heating. The use of fuel oils, which can be converted into more valuable products, for uses in which they can readily be replaced by coal, as domestic heating and fuel for power plants, is a gross misuse of a very valuable and limited resource.

Some authorities in the artificial-gas industry anticipate important technological changes in that industry and the manufacture of 550-Btu gas entirely from coal is contemplated. A recent bulletin by F. W. Sullivan, Technical Director of the Institute of Gas Technology, states:

"While the indicated future tightness in the oil situation may be relieved by later discoveries, certain important consequences to the gas industry are inevitable. The Petroleum Administrator has recommended an increase in the price of crude and there is great pressure in this direction from the oil industry. The consequent increase in the cost of products would affect both the manufactured-gas industry as a consumer of oil for carburetion and the present consumers of oil for domestic and manufacturing fuel. Moreover, a policy seems to be developing which

TABLE 5

Major Uses of Gas Oil and Fuel Oil in the United States

	(In 1,000 Bbl. of 42 Gallons Each)			
	1926	1931	1936	1940
Railroads	72,217	58,150	61,727	68,098
Steamships	79,287	83,558	80,324	74,803
Gas and Electric Power Plants	33,651	24,490	26,799	32,795
Heating Oils	24,079	40,410	116,617	160,379

would make petroleum products available for the requirements of ship fuel and for internal-combustion engines but which would restrict its use for manufacturing and domestic fuel. A. C. Fieldner of the Bureau of Mines recently said, in effect, that unless important new discoveries of oil resulted from increased exploration, it will soon be necessary to withdraw oil from use for heating where this can be done by coal. In view of this situation, it seems quite definite that the use of gas will be expanded to meet the needs of those who are accustomed to automatic heating and who appreciate the elimination of storage and ash-disposal problems encountered with other fuels."

Table 5, which presents the major uses of fuel oils, shows that while the consumption of such fuel by other major uses, exclusive of the Navy, has remained practically unchanged since 1926, the use of oil for heating has increased tremendously. Most of this increase has been during the years of overproduction of crude and the effort to exploit this relatively new market to aid in getting rid of the surplus. The condition which brought this particular market into existence no longer exists.

It has been stated repeatedly in earlier discussions of the effects of a domestic petroleum shortage that there appears to be no reason whatever for any sudden change or dislocation of the industry or any of its usages, certainly nothing as violent and far-reaching as the sudden rationing of motor fuel and fuel oils made necessary by transportation difficulties, curtailment of imports by submarine activity, and extraordinary war demands. Resumption of imports when the war ends is certain to bring much relief. The industry is stressing the possibility of more prompt relief by increased drilling, particularly wildcatting, and to stimulate wildcatting higher prices for crude have been recommended. The results of the latter are very uncertain, particularly as to the time required to get substantial results. Both mean higher prices. Ickes believes that even with relief afforded by imports, the period of adequate supplies of petroleum products is not more than a few years and has accordingly stated his intention to ask Congress to support the manufacture of shale oil and the hydrogenation of various American coals on a scale sufficiently large to determine the costs under American conditions and on American raw materials.[10] Ickes recognizes that at present price levels neither could be operated at a profit. In the meantime our petroleum industry will undergo many technological and usage changes.

The manufacture of chemicals from petroleum and natural gas, the manufacture of chemicals for the improvement of petroleum products, and the use of chemical processes for the refining and conversion of petroleum products will probably not be curbed as petroleum and its derivatives become more valuable. In many cases it seems likely that these will be considerably increased.

Most of the utilization of petroleum hydrocarbons for chemical manufacture has been based on the use of olefins made by cracking. Although the amounts of ethylene, propylene, and butenes made by pressure cracking processes have been large in the aggregate, their concentration in by-product gases has generally been so low that in many cases it has been more advantageous to operate special cracking processes, using propane, butane, or other oils, to get gases rich in these olefins. The use of higher cracking temperatures to obtain gasoline of higher octane numbers and catalytic cracking under certain conditions to obtain butene and butadiene, has greatly increased the output of ethylene and propylene and in many cases yields these in relatively high concentration. War censorship advisedly prevents details of these operations. The list of important chemicals now being manufactured from ethylene and propylene is fairly well known and includes ethyl alcohol, ethyl chloride for the manufacture of tetraethyl lead, ethylene dichloride, vinyl chloride for vinyl plastics, ethylene glycol, ethylene oxide, and a series of derived products, isopropyl alcohol acetone, acetic anhydride, butyl alcohols, methyl ethyl ketone, amyl alcohols, butyl rubber from isobutene (and butadiene or isoprene), viscous and solid polymers from isobutene, alkyl amines, nitroparaffins, and a larger number of other products of lesser importance.

The most important synthetic product now made by the petroleum industry is butadiene for synthetic Buna S and Buna N rubbers. The manufacture of butadiene and 100-octane aviation gasoline is more or less interrelated. Both processes seem certain to survive on a large scale, though perhaps not on the present scale, after the war. Quantitatively, against the statistical background of the petroleum industry, butadiene and synthetic rubber are not important. Their cost after the war will depend to a considerable extent upon the demand for and value of 100-octane gasoline since the raw materials for both are interrelated. Butadiene made only from the butene by-product of catalytic cracking and from heretofore normally surplus butane could remain at a relatively low cost figure largely independent of the price structure of crude and ordinary motor fuel.

Conclusion

Our petroleum consumption has been in excess of the rate of finding new oil for several years. While our total known reserves are larger than heretofore, about 20 billion barrels, proper production from these fields to realize the ultimate estimated production would normally require imports to make up our deficiencies. The oil industry has entered a phase characterized by increasing necessity for imports. Although higher prices for crude and petroleum products are to be expected and shifts in the manufacture of products, from low priced to higher priced and more indispensable products are inevitable, there is not likely to be any sudden dislocation of the industry or any usages. The higher prices resulting from domestic shortage, greater imports, and other causes are not likely to curb the use of the more essential petroleum products, nor the continued growth of the manufacture of chemicals from petroleum.

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Individual Acid Treatment For Thin Multiple Zones

New procedure for individually acidizing thin closely-spaced sections distributed irregularly through broken formation results in important production gains for Kansas field

By FRANK B. TAYLOR, Staff Writer

SEPARATED multiple zones of saturation in Dayton pool, Phillips County, Northwest Kansas, has forced the development of a new acid-treating procedure. Production in the field is from Lansing-Kansas City lime (Pennsylvanian) with saturation in from 1 to 10 benches irregularly distributed through 300 feet of formation. The productive benches are generally between 1 and 9 feet in thickness.

Dayton now has 23 producing oil wells, 1 salt-water-disposal well, and is apparently defined. Current production from the pool is about 700 barrels daily, the oil being 35 to 36 API gravity. Total depth varies but is around 3500 feet with top of the first saturation at about 3000 feet. Rotary tools are used for drilling to total depth but then a switch is made to cable tools for drilling plugs and to rip casing at indicated saturation.

Completion practice is to cement 5½-inch on top of the bottom break. Before setting pipe it is customary to make an electrical log of the hole, and to use this with sample analyses to determine casing spot and zones of the formation to be acid treated.

The first part of the treatment of the formation is normal, with the acid being run in through the casing. This stage takes care of the bottom break of the formation which remains open below the casing spot. On a typical well, the next step is to set a removable bridging plug in the casing above the top of the lower break which has just been treated. The next higher break is then opened by ripping the casing, and this break is then treated down the casing in a conventional manner.

This process is continued up the hole until each saturated bench indicated as a prospective pay section, is treated. Each treatment is individual by backing the removable plug up the hole and opening the casing in the next zone to be isolated. Treatment has also been made through tubing as in one instance where the casing was ripped in three spots, and two packers were run in on the tubing string. The packers were set between the casing areas ripped open, and the lower break was then treated. Following this, the tubing was raised and the second break treated, and the third break was then treated after the tubing had been raised through the position of the upper packer. In this last described series, the treatments were made through the tubing in three separate injections.

As is usual practice, the acid is run into the hole under an oil load; surface pressure being from 500 to 800 pounds as required. Acid volumes vary according to the thickness of the sections to be treated but in most instances are between 250 and 1000 gallons per section.

A typical well, ripped casing, and treatments, would be as follows:

5½-inch set at 3430 feet.

3430-3441, open hole, treated through casing.

3422, removable bridging plug set.

3406-3415, casing ripped and treated, through casing.

3379, removable bridging plug set.

3366-3372, casing ripped and treated, through casing.

3360, removable bridging plug set.

3348-3352, casing ripped and treated, through casing.

3234-3241, 3284-3294, and 3323-3342, casing ripped, two packers run on tubing, and well treated through three rips with acid through tubing.

Due to the fact that various of the prospective pay sections are so close together in the field, considerable difficulty has been experienced in circulating between the ripped sections of the casing. In some instances the cement bond threatened to break down before the formation when the application was made. Experience gained in the pool advanced this treating technique and allowed its successful application to a majority of field wells.

On initial tests of the formation prior to treatment, the sections of the lime responded weakly.

In most treatments of the thin sections of saturation, the acid doubles the production, and in a few cases, the increase was well above this average.

In several of the wells of this pool, concentrated acid was used as a new departure in treatment. It was thought that by using an acid of higher concentration than normal, the wells would clean up faster than if they were treated with the regular 15-percent solution. While it is felt that this objective was at least partially realized, the practice is a debatable one, and there was no conclusive evidence either way.

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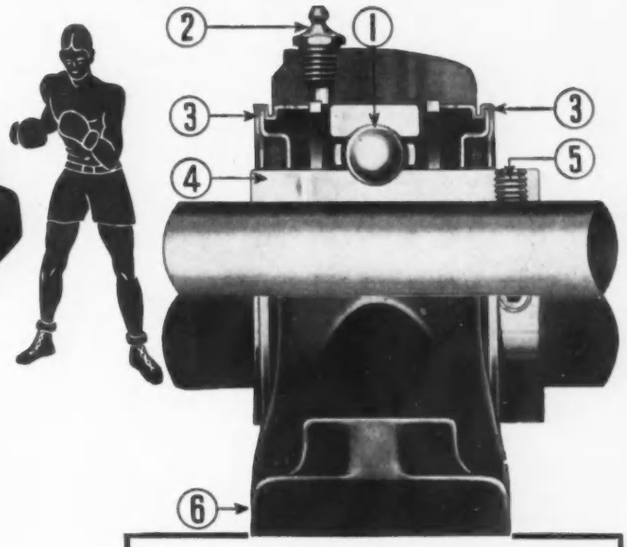

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July Discovery Record Best So Far This Year

As in earlier months, discoveries were predominantly poor except for one above-average addition to reserves through an extension of productive area in Elk Basin field, Wyoming

By L. J. LOGAN, Associate Editor

JULY may go down on the records as the most successful month of this year in searching for new oil reserves. Not only was there a record number of discoveries for any month this year, but the discoveries probably represented more new oil than had been found in any previous month of 1943.

As in earlier months, July discoveries were predominantly of mediocre or poor quality, only one among them all having been obviously above-average. But taken together, even the numerous ordinary producing areas represented a substantial amount of new oil; and in addition to them, there was the one extraordinary addition to reserves—the proving up of a bonanza in the west. This highly important development was the definite emergence of the Tensleep sand of the Elk Basin field, Wyoming, as an oil reserve of the first order.

Without that exceptional enhancement of the Wyoming field's importance, the July record would have been unimpressive and disappointing, with probably less oil found than in any other month of this year, in spite of more wildcat completions and more discoveries than in any earlier month..

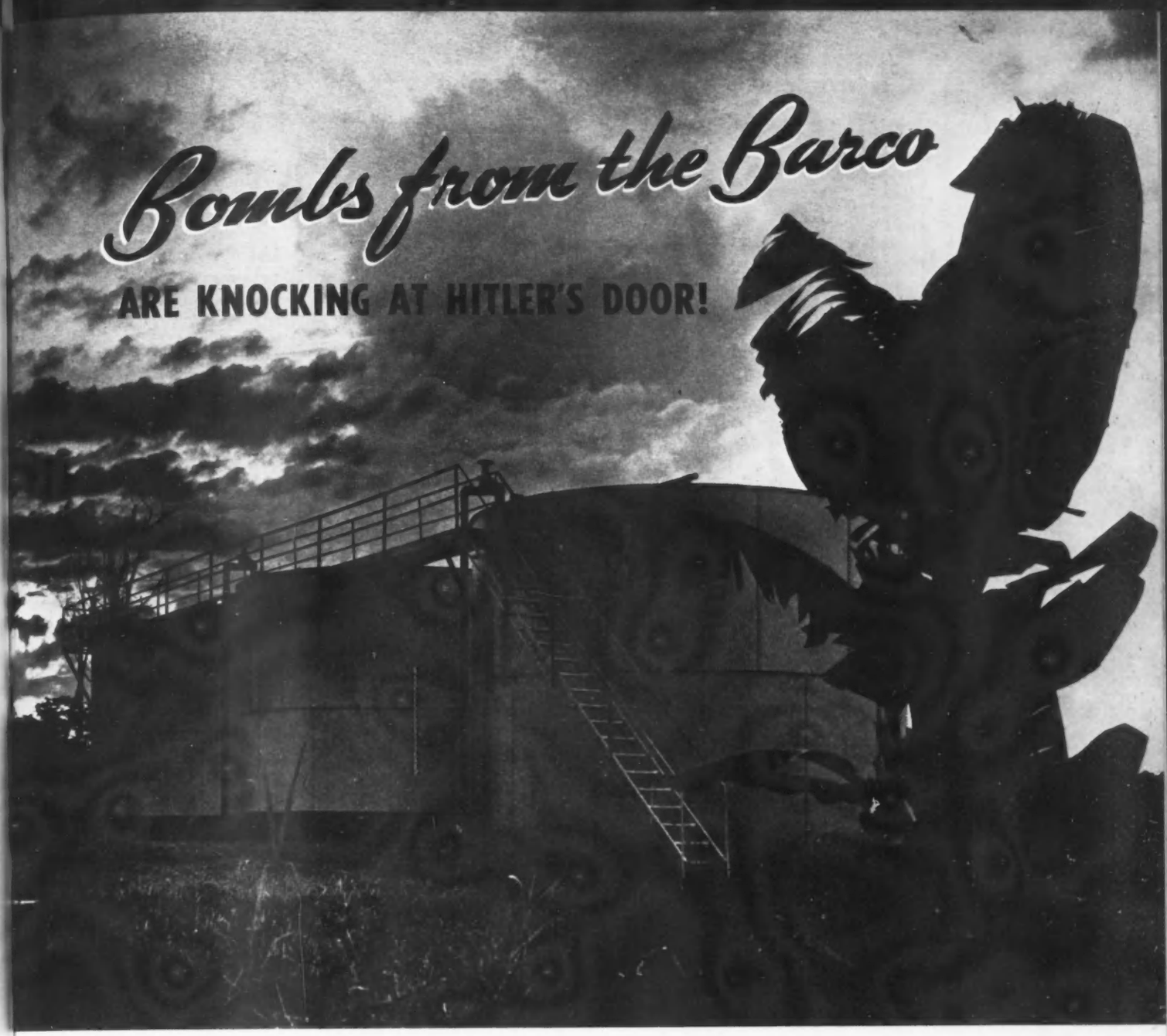
Exclusive of the Elk Basin development, the producing areas opened in July may ultimately produce no more

Results of Wildcatting in United States During July and to Date for Year

This report embraces approximately one full month's wildcatting, although not exact results for calendar month. It includes some wells completed in late June but omits some completed in late July.

STATE or District	JULY: PRODUCTIVE WELLS: Oil Discoveries: Fields	Oil Discoveries: New Pays	Oil Discoveries: Extensions	Distillate Discoveries: Fields	Distillate Discoveries: New Pays	Distillate Discoveries: Extensions	Gas Discoveries: Fields	Gas Discoveries: New Pays	Gas Discoveries: Extensions	Total	Unproductive Tests: Wildcats	Unproductive Tests: Semi-Wildcats	Unproductive Tests: Total	Total Wildcats	FIRST 7 MONTHS OF YEAR: Total Wildcats, 1943	Wildcats Except Extensions or Semi-Wildcat Tests: Total 1943	Total 1942	Productive 1943	Productive 1942	Dry 1943	Dry 1942
Alabama									1	2	7		7	9	1	1	3			1	3
Arkansas			1						1	2	7		7	9	40	34	11	5	5	29	6
California							1			1	9		9	10	117	113	65	6	5	107	60
Colorado							1			1				1	2	2		1		1	
Georgia																	2				2
Illinois	3	4	11							18	25		25	43	260	230	333	39	52	191	281
Indiana											4		4	4	45	41	51	2	9	39	42
Kansas	5									5	36		36	41	264	259	210	35	31	224	179
Kentucky	5						1			6	14		14	20	56	56	16	12	1	44	15
Louisiana			1				1	1	1	4	6		6	10	84	74	98	20	29	54	69
North Louisiana											4		4	4	52	46	43	4	3	42	40
South Louisiana			1				1	1	1	4	2		2	6	32	28	55	16	26	12	29
Michigan	1									1	18		18	19	120	112	96	15	10	97	86
Mississippi											5		5	5	17	17	18	1		16	18
Missouri							1			1	5		5	6	12	12		2		10	
Montana											4		4	4	7	6				6	
Nebraska																	11				11
New Mexico															28	27	18	1	6	26	12
Oklahoma	2	1								3	15		15	18	174	167	172	25	38	142	134
Texas	9	6	4	2	1		1	1	1	25	78		78	103	659	619	702	103	129	516	573
E. Tex. Bor. Co.'s Rest of East Texas											5		5	5	5 53	3 52	3 59	6	1 5	3 46	2 54
North Texas	6	3								9	27		27	36	169	167	152	33	22	134	130
W. Central Texas							1			1	15		15	16	71	70	92	11	16	59	76
West Texas	2									2	3		3	5	54	52	93	12	17	40	76
Texas Panhandle															1	1	1		1	1	
Gulf Coast, Upper			1	2						3	9		9	12	62	53	57	9	17	44	40
Gulf Coast, Lower		1	2		1			1	1	6	12		12	18	114	101	110	22	37	79	73
Southwest Texas	1	2	1							4	7		7	11	101	92	97	10	10	82	87
S. Central Texas															29	28	38		3	28	35
Wyoming			2							2	1		1	3	12	7	4	4	3	3	1
Total U. S.	25	11	19	2	1		6	2	3	69	227		227	296	1,898	1,777	1,810	271	318	1,506	1,492
Total Last Month	26	10	7		1	1	4	2	2	53	226	2	228	281							
January-July, 1943	158	62	76	12	3	3	30	6	8	358 †271	1,506	34	1,540 †1,506	1,898 †1,777	1,898	1,777		271		1,506	
January-July, 1942	177	102	*	9	1	*	21	8	*	†318	1,492	*	†1,492	†1,810	*		1,810		318		1,492
Percent Change	—10.7	—39.2		+33.3	+200.0		+33.3	—25.0		†—14.7	+0.9		†+0.9	†—1.8		—1.8		—14.7		+0.9	

* Data on semi-wildcats not available for 1942. † Exclusive of semi-wildcat or extension tests.



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Discovery Wells of New Oil and Gas Fields, New Pay Horizons, and Field Extension Areas in the United States During July, 1943

This report embraces approximately one full month's discoveries. It includes some wells completed in late June but omits some completed in late July

County	Field	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production, Method, and Choke	Gravity of Oil	[3]Structure; [4]Method of Discovery	Preliminary Estimates of Reserves Found; Remarks
		ARKANSAS—Oil Field Extension									
Columbia	W. Atlanta	Tide Water's A. O. Young 1, ne ne 18-18s-19w, 8000' of prod. at Atlanta.	4- 9-43	6- -43 7- 4-43	8356	7210-7216 8294-8300	Cotton Valley sand, Jur. Smackover lime, Jur.	F. 387; ¼" F 694; ¼"	41.7 44	Ant.; Seis.	Considered semi-major discovery, involving est. 7 miln. bbls. reserves. Area may have 20 or 25 wells, 40-ac. spacg. Besides extendg Smackover lime pay of Atlanta 8,000 ft w, this well opens shallower Cotton Valley prod, which may be productive in all or some of Atlanta's 22 wells, now producing only fr Smackover.
		ARKANSAS—Gas Field Extension									
Johnson	Silex	Ark. La. Gas Co.'s Hendrix 1, se 21-10n-21w, ¾ mi w ext to Pope Co. discovery.	1- -43	6- -43	3255	2740-2810 2810-2830	Atoka sand, Penn.	F 1.5 mil.	Gas	Dr.	Minor and no reserve of importance.
		CALIFORNIA—New Gas Field									
Sacramento	Thornton Area	Amerada's Capital Lands Co. 1, 36-5-5, 4 mi w town of Galt		7- -43	8367	3355-3380	Capay sand, Eoc.	F 6.8 mil.; ⅝"	Gas		Commercial find, but probably no large reserve.
		COLORADO—New Gas Field									
Rio Blanco	Douglas Creek	Superior-Continental-Union Oil's Unit 1, nw nw sw 5-3s-101w	8-12-42	7- 2-43	8558	4324-4437	Dakota-Lakota sd, Cret.	F 9.7 mil.; 2½"	Gas	Domal ant.; Surf.	Of little present value. Holds future value as gas reserve for Western slope Colorado. Estimated reserve 100 billion cu. ft. natural gas. May have 20 wells eventually.
		ILLINOIS—New Oil Fields									
Edwards	Lancaster, W.	First Nat'l Petr. Trust's Myers 1, ne nw nw 11-1n-14w, 3 mi ne of West Salem.	6-16-43	7-27-43	2873	2857-2865	Levias lime, L. Miss.	F 961; no wtr.	41.5		Nearby dry holes indicate probable small productive area.
Jefferson	Mt. Vernon	Magnolia-Newall's Badgett 1, sw ne ne 18-3s-3e, 2 mi nw King pool	6-16-43	7-30-43	2693	-2693	Aux Vases sand, U. Miss.	P 60; 19 wtr.			Offset to nw was dry in Aux Vases. May extend se.
Madison	Marine	Rockhill Oil Co.'s Mayer 1, se nw sw 15-4n-6w, 6 mi n St. Jacob pool	6- 6-43	7-20-43	2590	1780-1796	Devonian lime, Dev.	P 14; 3 wtr.			Probably unimportant; tested Trenton lime dry.
		ILLINOIS—Oil Field Extensions									
Coles	Mattoon	Keating's Uphoff 1, se nw nw 25-12n-7e, 1½ mi ne of one-well pool	6-15-43	7-20-43	2063	2012-2026	Aux Vases sand, U. Miss.	P 25; 24 wtr.	38.4		Probably unimportant; might have been better well if completed above water zone.
Edwards	Grayville West	Midstates Oil & Ashland Ref. Co.'s Coad 1, nw nw nw 13-3s-10e, 1 mi ne ext.	6-13-43	7-27-43	3240	1977-1987	Pennsylvanian sd, Penn.	P 15; 22 wtr.			Too small I. P. and too much water to be important.
Wabash	Mt. Carmel	George & Wrather's Dunkel 1, sw sw nw 4-1s-12w, ¾ mi n ext.	6- 5-43	7- 6-43	2347	1989-2004	Weiler sand, U. Miss.	F 3; 5 wtr.			Made 1.5 miln. ft. gas, too. To be reworked; may be better well.
Wayne	Clay City Consol'd	Rockhill & Pure's Riggs 1, c ne ne 22-1n-8e, ½ mi sw ext.	4-30-43	7- 6-43	3145	3020-3030	Levias lime, L. Miss.	P 6; 2 wtr.			Unimportant.
Wayne	Covington	Buren & McGregor's Fee 1, c nw se 32-1s-7e, ¾ mi se ext.	5-21-43	7-30-43	3281	3274-3281	McClosky lime; L. Miss.	P 50; no wtr.			Apparently extends Covington pool to se but is separated from Boyleston pool by several dry holes.
Wayne	Covington So.	Ohio Fuel Supply's Nussbaum 1, c nw sw 13-2s-6e, 1 mi s ext.	6-10-43	7-13-43	3335	3308-3316	McClosky lime, L. Miss.	P 375; 16 wtr	38.6		Important extension. Much activity near well.
Wayne	Johnsonville West	Wisconsin O. & R. Co.'s Powless 1, c nw sw 13-1n-5e, 1 mi nw ext. to 1-well pool.	5- 7-43	7- 6-43	3131	2968-2982	Aux Vases sand, U. Miss.	P 36; no wtr.			Revives pool in which original well abandoned in 1942.
Wayne	Mt. Erie South	Weinert's McConnell 1, c ne nw 27-1s-8e, ¾ mi ne ext.	6-18-43	7-27-43	3252	3068-3119	Aux Vases sand, U. Miss.	P 88; no wtr.			Aux Vases tested and found dry 1 mi. sw. Otherwise extent of pool is undetermined.
White	Calvin	Whisenant & Trenchard's Owen 1, sw nw nw 18-4s-14w, 1¼ mi w of New Harmony Consolidated pool.	6- 2-43	7-13-43	2853	2800-2843	Bethel sand, U. Miss.	P 65; no wtr.	37.0		Midway between Calvin North and Phillipstown pools, well may prove intervening area.
White	Calvin North	British-American Oil's Metcalf 1, sw se ne 31-3s-14w.	6- 7-43	7-20-43	1540	1526-1540	Pennsylvanian sd, Penn.	P 125; no wtr.			Extends Calvin North pool ½ mi n.
White	Phillipstown	Eason Oil's Clark 1, se nw nw 30-4s-11e, ½ mi e ext.	6- 5-43	7- 6-43	1346	1333-1348	Pennsylvanian sd, Penn.	P 231; no wtr.			Indicates important Pennsylvanian possibilities in area.
		ILLINOIS—New Oil Pays									
Hamilton	Dale-Hoodville	Pure's Johnson Consolidated 1, se sw 18-6s-7e, 6½ mi se McLeansboro.	6-12-43	7-13-43	3122	2426-2435	Tar Spgs. sd, U. Miss.	F 1187; no wtr.			Of great importance. Two other wells completed in this pay also yielded high I. P.
Jefferson	Woodlawn	Magnolia's I. Shirley 7, ne ne se, 35-2s-1e		7-30-43	1961	1780-1813	Cypress sand, U. Miss.	P 108; 8 wtr.			May indicate Cypress prod. throughout pool.
Richland	Olney	Texas Co.'s Boatman Commun. 2, se sw 27-4n-10e, n city limits Olney.	6-21-43	7-27-43	3094	3063-3077	Levias lime, L. Miss.	P 90; no wtr.			On edge Olney fld, which has had only McClosky prod., this well may forecast Levias prod. across fld.
White	Calvin North	McBride's Potter 1, N/2 sw 6-4s-14w, 4 mi n Phillipstown	6-29-43	7-20-43	2301	2271-2277	Walterburg sd, U. Miss.	P 190; no wtr.			Extent of Waltersburg production not yet known, as other wells in vicinity stopped in Pennsylvanian.
		KANSAS—New Oil Fields									
Barton		Ingling & Parker's Ames 1, se sw se 22-18s-11w		7- 4-43	3329	3042-3049	Arbuckle lime, Ord.	F 287			Small structure. May get 5000 barrels per acre.
Butler		Branine & Goering's Joseph 1, se sw nw 18-25s-4e		7-21-43	2687	2681-2687	Mississippi lime, Miss.	P 288			Apparently small pool. May gain importance with more drlg.
Ellis		Coralena Oil Co.'s Glathart 1, sec 16-12s-19w		7-11-43	3555	3504-3514	Lansing-K.C. li., Penn.	P 275			Recovery should run 6000 barrels per acre.
Saline		Wolf Creek Oil's Karber 1, cs½ sw se 9-16s-1w		7-13-43	2000	1994-1998	Kansas City lime, Penn.	F 86	33		Indicated recovery of 8000 barrels per acre.
Stafford		Skelly Oil's Campbell 1, sw se sw 34-24s-13w		7- 5-43	4433	4419-4433	Arbuckle lime, Ord.	F 3000			Better than average discovery. Expect 12,000 bbls per acre.
		KENTUCKY—New Oil Fields									
Henderson	Greenbrier	Carter Oil's De Vasher 1, 24-O-24		7-14-43	2655	2498-2506	McClosky lime, Miss.	P 114			Apparently not of great importance.
Union	Hitesville	Carter Oil's Russelburg 1, 24-P-24		7- 7-43	1713	1700-1713	Waltersburg sd., Miss.	P 182			Fair discovery; will stimulate drilling.
Union	St. Vincent	Winert & Pure's Greenwell 1, 9-O-20		6-30-43	2593	2556-2593	McClosky lime, Miss.	P 318			
Union	Utley	Miller & Shiarella's Willet 1, 16-P-21		2-24-43	2581	2576-2581		P 200			
Webster	So. Poole	Sinclair-Prairie's R. L. Higginson 1, 10-N-23		7-14-43	2747	2236-2248 2662-2690	Cypress sand, U. Miss. McClosky lime, L. Miss.	P 27			Discovery of little importance. Needs more drilling in area.
		KENTUCKY—New Gas Field									
Henderson		Indiana Farm Bureau's Chessire 1		7- 7-43	790	785- 790	Mansfield sand, Penn.	F 0.6 mil.	Gas		Average gas field discovery.
		SOUTH LOUISIANA—Oil Field Extension									
St. Mary	Bayou Sale	Humble's Miami Corp.'s 3-E, start sw cor sec 43, go e'ly on sl sec for 3209', th n'ly at ra 597' to loc in sec 43-16s-9e.	5- 1-43	6-21-43	10260	10100-10114	Sand, Mio.	F 250; 24/64"	35.9	S.D.; Flnk Drlg.	E. ext., may add 5,000,000 bbls to reserves; fairly good sand.
		SOUTH LOUISIANA—New Gas Field									
Jeff Davis	N. Welsh	Stanolind's Trimble 1, 330' s&w of ne cor se sw sec 16-9s-5w North flank Welsh dome.	5-10-43	7- 9-43	9150	8939-8948	Sand, Lower Olig.	F 19.0 mil.	Gas	S.D.; Sub. & Dr.	More drlg expected, to explore for oil.
		SOUTH LOUISIANA—Gas Field Extension									
Terrebonne	DeLarge	Union Producing Co.'s Fitzpatrick & Vizard 1, c of sw se sec 77-19s-17e	2-14-43	7- 6-43	13563	13463-13544	DeLarge sand, Mio.	F 13.3 mil.	Gas	Dome; Geop.	Large gas reserve.

		SOUTH LOUISIANA—New Gas Pay									
St. Mary	Charenton	Pan American's Laws 24, 1940′ e & 1120′ n of sw cor sec 30-13s-10e	5- 3-43	6-22-43	7122	6282-6304	Sand, Mio.	F 0.6 mil.	Gas	S. D.; Sub.	No addition to reserves at present.
		MICHIGAN—New Oil Field									
Newaygo	Goodwell	Pure's Harris 1, e½ ne se 80-4n-11w, Goodwell twp., 3 mi s Woodville Pool, 7 mi nw White Cloud.	6- 9-43	7- 5-43	2742	2732-2742	Traverse lime, Dev.	F 670; ¼″	44	Ant; C. D., Geol.	Mediocre reserve likely unless Dundee and Monroe found productive; these untested.
		MISSOURI—New Gas Fields									
Clinton		E. R. Hendricks' Estep 4, nec nw 34-56n-30w, 4 mi e Turney	5-24-43	6- 7-43	565	478- 487	Peru sand, Penn.	F 0.175 miln.	Gas		No pipe line. At present used only by land owner.
Jackson		M. J. Henderson's Scarborough 1, se sw sw 23-49n-31w	6- 4-43	6- 9-43	252	243- 252	Warrensburg sd., Penn.	F 0.105 miln.	Gas		Small well, gas piped to house ½ mi. distant.
		OKLAHOMA—New Oil Fields									
Okfuskee	N. E. Dill	Midco Oil Corp's Turner Community 1, ne nw ne 24-12n-8e		7- 3-43	3504	3496-3504	Cromwell sd., Penn.	F 2445			One of best wells drilled in state in several months. Recovery indicated at 14,000 barrels per acre.
Pottawatomie	South Shawnee	Charles Ralph's Pool 1, c ne ne ne 6-9n-4e		7-10-43	5201	5185-5191	Simpson dolo. lime, Ord.	P103;300wtr			Not much value. May pay out cost of well.
		OKLAHOMA—New Oil Pay									
Oklahoma	Britton	C. C. Pepper's Britton 1, nw se 33-13n-3w		7-25-43	6250	6200-6218 6220-6250	Oswego lime, Penn.	Sw 400			Productive area probably small. Recovery estimated 4500 barrels per acre.
		NORTH TEXAS—New Oil Fields									
Archer		Henry Grace Prod. Co.'s F. J. Henry 1, 400′ snl & 1450′ wel sec 35, Blk 5, Clark-Plumb sur.	7- 7-43	7-28-43	906	902- 906	Cisco sand, Penn.	P 30		Ant.; Geol.	Unimportant, as nearby dry holes restrict prod. to sm. area.
Clay	Burns-Midway	L. T. Burns et al's J. P. Thompson 1, 600′ snl & 556′ ewl Lot 29, Webb's subdv. of San Augustine Univ. Survey, 2 mi w by s Buffalo Springs pool.		7-21-43	6044	6010-6044	Mississippi lime, Miss.	F 1197; ¼″	45	Ant.; Geol.	Single well reserve of 240,000 to 320,000 bbls. Is 3½ mi ne Ellenburger failure that partially defines structure, being 128 ft. low on top of Mississippi.
Cooke		Fred Snuggs-McElreath-Suggett & Seitz's McGeorge-Snuggs 1, 1319′ ewl and 1386′ nsl sec 64, Fannin CSL Sur. A-1214, 1 mi s Walnut Bend fld.	4-25-43	7-14-43	6010	4285-4300	Strawn sand, Penn.	P 236	35	Mono.; Geol.	Single wel lreserve 40,000 to 60,000 bbls. May be established as extension to Walnut Bend field.
Wichita		Continental Oil-A. R. Dillard's G. T. West 1, 4922′ snl and 330′ wel of 411.17-ac. lse, G. W. Scott survey A-254.	6- 3-43	7-31-43	5687	4230-4260	Strawn sand, Penn.	F 154; 3/32″	40	Ant.; Geop.	Single well reserve 80,000 to 120,000 barrels. Strawn pay likely to be erratic in performance.
Wichita		Consolidated Oil Co.'s A. Laukhuf 1, 467′ out of swc block 5, Cherokee County School Lands Survey, 1¾ mi ne Asylum pool, nearest but deeper producing area.	6- 4-43	7-30-43	5401	4415-4432 4440-4465	Strawn sand, Penn.	F 624; 1/16″	44	Ant.; Geol.	Discovery affords crude reserve of 160,000 to 200,000 bbls.
Young		Anderson-Prichard Oil & Col-Tex Refg. Co.'s W. T. Donnell 1, 4101′ ewl & 990′ from M/N/N line of 1046-ac. tr, Margeret Edmonds sur A-91.	5-16-43	7-28-43	4768	4184-4198	Marble Falls lime, Penn.	F 213; ¼″		Ant.; Geol.	Single well reserve 80,000 to 120,000 barrels. Not important as Marble Falls pay comparatively thin.
		NORTH TEXAS—New Oil Pays									
Archer		Perry Browning's Browning 3, 467′ snl & 1641′ ewl Lot 89 and Blk 6 Garman Emigration-L. P. Hunt sur.		7-26-43	4980	4936-4978	Strawn sand, Penn.	F 828; ¾″		Ant.; Geol.	Single well reserve of 200,000 to 240,000 barrels. Between pool's 2 Ellenburger producers, which showed prod. possibilities in Strawn. Outlying dry holes restrict pool to small area.
Young	Allar	Panhandle Refining Co. et al's Allar-Hunt 1-P, 3305′ snl and 1295′ ewl of E-520 acres of N-961 acres of S-1185 acres of TE&L Co. Sec. 3409	6-12-43	7- 7-43	1697	1686-1697	Canyon (Palo Pinto) lime, Penn.	P 49; 25% wtr.	37	Ant.; Geol.	Unimportant. Shallow pay not over whole structure.
Young	Murray	Standard Oil Co. of Texas-Hanlon & Buchanan's S. R. Donnell 4, Lse No. 4, 991′ snl and 1400′ wel TE&L Co. Sec. 2371.	5- -43	7-12-43	4610	3745-3750	Bend lime, Penn.	F 317; ¼″	39.6	Ant.; Geol.	Single well reserve of 40,000 to 60,000 bbls; pay zone thin, and not prod. in 4 nearby tests.
		WEST CENTRAL TEXAS—New Gas Field									
Palo Pinto		W. K. Gordon's J. W. Conway 1-A, 990′ nsl and 2815′ wel T&P 59, Block 2, 4½ mi ne nearest gas prod.	5-19-43	7-24-43	3973	3696-3973	Sand, Penn.	F 0.8 mill.	Gas	Ant.; Geol.	Unimportant gas area.
		WEST TEXAS—New Oil Fields									
Andrews		Skelly's University 1-K, c sw sw Sec 28, Blk 9, 2¼ mi e by n of Emma fld.	2-27-43	7-28-43	7500	5468-5550	Holt lime, Penn.	P 177	33.3	Ant.; Geop.	Single well reserve 40,000 to 60,000 barrels. Not important unless later development uncovers attractive production.
Pecos		Magnolia-Anderson-Prichard's E. C. Powell-State 1, c w ¼ of s½ H&GN 96, Block 10, 1½ mi ne Ellenburger prod in Apco fld.	3-17-43	7- 8-43	3557	3539-3546	Clear Fork lime, Penn.	F 100; 1″	21.9	Ant.; Geol.	Single well reserve of 60,000 to 80,000 bbls. Void of gas; has water drive, thus limited prod. indicated.
		TEXAS UPPER GULF COAST—New Distillate Fields									
Chambers	Jackson Ranch	John Mayo-Kirby Petroleum-Wynn Crosby Drlg. Co.'s Jackson 1, 660′ fr s&el of w 630-ac of Jackson 1259-ac lse, John S. Roberts sur, A-21.	5-20-43	7- 2-43	9515	8102-8108	Frio sand, Olig.	F 84; ¼″	62.5	Ant.; Geop. & Sub.	Gas-distillate area only. Adds 400,000 to 700,000 bbls.dist. to reserves.
Matagorda	Sugar Valley	Superior Oil's Peterson 1, 3400′ s & 7100′ w of ne cor P. Burnett & A. S. Sojourner sur, A-13, 2½ mi e of Van Vleck.	12-30-42	6-17-43	11854	9754-9759	Frio sand, Olig.	F 133; 19/64″	53	Dome & Flt; Sub. &. Seis.	Believed large gas-distillate reserve and maybe oil; prospect large in area. Can be listed now for possibly million bbls.
		TEXAS UPPER GULF COAST—Oil Field Extension									
Harris	Humble	Texas Co.'s Fee 52, 990′ fr el & 280′ fr sl blk B-5, 517-ac tr.	6-18-43	7-26-43	5346	5271	Yegua sand, Olig.	F 651; 19/64″	44	S.D.; Sub. & Flnk Dr.	Highly important. Opens prod. on e flnk in Jackson sand series. Extends prod. ½ mi e, possibly adds 5 to 7 million bbls. new oil to reserves.
		LOWER GULF COAST—New Oil Pays									
Jim Wells	Seeligson	Transwestern's Seeligson B-4, 727′ fr el & 4194′ fr sl 998-ac lse, 1½ mi n Premont.	5- 9-43	6- 9-43	6250	4905-4921	Frio sand, Olig.	F 114; 3/32″	37.8	Ant.; Geop. & Sub.	May add 3 to 4 million bbls of reserves.
		LOWER GULF COAST—New Gas-Distillate Pay									
Kleberg	Seeligson	Humble's King Ranch-Cabeza 7, 2802′ fr n'ly nl of SK&K sur 181, & 660′ fr wl King Ranch lse.	10- 8-42	5-29-43	6948	6920-6940	L. Oligocene sd., Olig.	F 14.0 mil.	Gas	Ant.; deep dr.	Opens new area to gas-distillate development.
		LOWER GULF COAST—New Gas Pay									
Refugio	Refugio-Fox	Union Producing Co.'s Fox 26, 2975′ fr sl 1888-ac lse, William Hews sur.	4-10-43	6-17-43	7190	6626-6635	Frio sand, Olig.	F 16.5 mil.	Gas	Ant.; sub. & dr.	
		LOWER GULF COAST—Oil Field Extensions									
Karnes	Hobson	Seaboard Oil Co.'s Moczygemba 1, 467′ fr s&el 340-ac lse, Don Erasmo Seguin Gr, A-10.	6-19-43	6-28-43	4009	4000-4006	Carrizo sand, Eoc.	F 133; 3/32″	32	Fltd; sub. & dr.	2350 ft. sw ext.; sands not thick, but may add 2 to 3 miln bbls to reserves.
Nueces	Stratton	Chicago Corp.'s Wardner 53-G, 3668′ e, th 2050′ n fr sw cor sec 10, Chas. Stratton subdvn, Paso Ancho de Arriba Gr, A-106.	4- 1-43	6- 3-43	6681	6356-6358 6395-6408	Sand, Mid. Olig.	F 143; 1/16″ F 145; 1/16″	43.2 35.8	S.D.; Flnk Dr., Sub.	Dual completion. Major extension, 2 mi w, opens thousands of acres to exploration; sands prolific; adds from 5 to 7 million bbls. to reserves.
		LOWER GULF COAST—Gas Field Extension									
Victoria	N. McFaddin	Barnsdall's Skarda 1, 1065′ fr swl & 1640′ fr nwl & 330′ fr sel of nw 111-ac tr, Francisco Peres sur, A-92.	5-29-43	7-13-43	6085	5164-5175	Sand, Olig.	F 50.0 mil.	Gas	Fltd; Sub.	Extension covers large area.
		SOUTHWEST TEXAS—New Oil Field									
Jim Hogg	Yeager	M. L. Massingill, Auto-Ordnance Co. & Texon Royalty's Yeager 1, 330′ fr n&el H. C. Yeager (H&GN) sur 29, 4 mi sw Hebbronville.	5-28-43	6-16-43	3771	3763	Cockfield sand, Eoc.	F 86; ¼″	36.5	Fltd Ant.; Geop.& Sub.	Shallow production. May add up to million bbls to reserves.

■ CONTINUED ON NEXT PAGE

County	Field	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production, Method, and Choke	Gravity of Oil	[3]Structure; [4]Method of Discovery	Preliminary Estimates of Reserves Found; Remarks
		SOUTHWEST TEXAS—New Oil Pays									
Starr	Rincon	Continental-Rice Institute's Slick E-6, 2310' fr sl & 330' fr wl sec. 537, 1320 ft sw prod in s area Rincon fld.	6-26-43	7- 9-43	4101	3553-3570	Frio sand, Olig.	F 83; $\frac{8}{64}$"	41.4	Sand lense on nosing; dr.	Opens considerable acreage to development, and may result in half million bbls. of reserves.
Starr	N. Sun	Sun's Montalvo Heirs 1-B, 1980' fr nl & 1000' fr wly el 1156-ac lse, Los Retaches gr.	1-28-43	5-27-43	8064	5936-5938	Sand; L. Olig.	F 20; $\frac{4}{64}$"	43.6	Domal, Sub.	1½ mi n Sun fld. May add 75,000 to 100,000 bbls of oil.
		SOUTHWEST TEXAS—Oil Field Extension									
Live Oak	Oakville	Continental's West 3, 990' fr nwl & 330' fr swl lot 65, M. Caronican sur, 5000' sw Oakville fld.	6- 3-43	7-19-43	1432	1429-1431	Cole sand, Eoc.	F 6.9; $\frac{8}{64}$"	20.2	Fld; Sub.	Not important. Extension confined by later drlg to approx. 40 acres.
		WYOMING—Oil Field Extensions									
Fremont	Steamboat Butte	British-American Oil Prod. Co.'s Tribal 1-C, sw sw 34-4n-1w	.....	7- 3- 43	5144	5119-5144	Morrison sand, U. Cret.	P 587	.....	.....	¼ mi. nw Sundance discovery.
Park	El Basin, Tensleep	Yale Oil Corp.'s Watson 1, ne ne ne 36-58n-100w	4- 3-43	7-24-43	5581	5377-5581	Tensleep sand, Penn.	F 1440; 2½"	31	Fltel Ant; Surf. Geol.	This ½ mi sw ext. probably is most important discov. in Rky Mts. since 1938. Raises indicated Elk Basin-Tensleep reserve from 45 to 180 million bbls., on basis of new total of 6,000 ac. at 30,000 bbls. per ac. (See article herewith for details.)

[1] Ages of producing formations abbreviated as follows: Mio, Miocene; Olig, Oligocene; Plio, Pliocene; Eoc, Eocene; U. Cret, Upper Cretaceous; L. Cret, Lower Cretaceous; Jur, Jurassic; Tri, Triassic; Perm, Permian; Penn, Pennsylvanian; U. Miss, Upper Mississippian; L. Miss, Lower Mississippian; Miss, Mississippian; Dev, Devonian; Sil, Silurian; Ord, Ordovician; Camb, Cambrian. [2] Barrels of oil per day (24 hr. rate), flowing, pumping, swabbing, or bailing; or millions of cubic feet of gas daily, open flow capacity; size of choke given in inches. [3] Type structure abbreviated as follows: Ant, Anticline; Dome; Fold, Fold-ed; Fltd, Faulted; Mono, Monocline; Nose; S.D., Salt Dome; Sch, Syncline; Tr, Terrace. [4] Method of discovery abbreviated as follows: C.D., Core drilling; Dr, Drilling; Geol, Geology; Geop, Geophysics; Grav. met, Gravity Meter; Sis, Seismograph; Sub, Subsurface; Sur, Surface Geology.

than 40 to 70 million barrels of oil, it is indicated by the presently available information on the new fields. These figures are, of course, highly conjectural, being very rough estimates not of reserves actually developed and made available, but only of indicated possible reserves that ultimately may be developed and recovered in drilling up the producing areas involved. Most of the newly productive areas so far have only one or a few wells each, leaving much to be determined about their importance. But in many cases, fair ideas of the value of the fields are indicated by considering general areas involved, performance of adjacent fields, available geophysical and geological data, and other pertinent information.

So important was the large extension of the Tensleep pay at Elk Basin in July that it caused an increase of around 135 million barrels in the estimated reserve represented by the field. Previously, the Elk Basin-Tensleep field was assigned a probable reserve of about 45 million barrels, but in the light of the July extension, it is conservatively estimated that the reserve involved may amount to 180 million barrels, on the basis of 6000 acres at 30,000 barrels per acre.

With this estimate added to the estimates of the other July discoveries, it is indicated that the discoveries of the month ultimately may afford from 175 to 200 million barrels of oil. In no previous month this year has exploration been that successful.

The July discoveries helped to compensate for failure in the first half of 1943 to find as much new oil as was being produced from older fields. In supplying continued heavy demand for petroleum, the industry is using up established reserves at the rate of about 120 million barrels per month, and on the average, it has been failing to find each month new sources which may be expected to develop ultimately into reserves equivalent to those depleted.

During July, wildcatting was maintained on about the same level as in June, 296 exploratory tests having been completed. This was on the basis of about 3550 wildcat completions per year. While such a rate exceeds that of any other year heretofore, it falls short of the 4500 wildcats set up by PAW as the goal for 1943.

Furthermore, current exploratory work is greater than that of earlier months this year, and so far in 1943, there have been fewer wildcat completions than in the corresponding period last year.

Records were not kept last year on semi-wildcats or extension tests, and therefore, comparisons must be made exclusive of those tests. In the first 7 months of 1943, accordingly, there were 1777 strict wildcat completions, or 2 percent less than the 1810 recorded for the corresponding months of 1942.

While the number of wildcats has been a little lower than last year, there has also been less success in finding new producing areas, the percentage of productive tests having been lower. The results have been as herewith indicated.

	First 7 Months 1942	1943
Oil Discoveries:		
New fields	177	158
New pays	102	62
Total	279	220
Distillate Discoveries:		
New fields	9	12
New pays	1	3
Total	10	15
Gas Discoveries:		
New fields	21	30
New pays	8	6
Total	29	36
Total Discoveries	318	271
Unproductive wildcats	1492	1506
Total strict wildcats	1810	1777
Percent productive	17.6	15.3
Percent dry	82.4	84.7

While the finding of new oil has been held down by a slightly smaller volume of wildcatting this year than last, and by the lower percentage of successful tests among those drilled, there has been also a perceptible decline in quality of discoveries. This year's new producing areas have included remarkably few major discoveries.

Elk Basin-Tensleep

The well which provided the significant extension of the Tensleep deep sand pay in the Elk Basin field, Park County, Wyoming, was Yale Oil Corporation's Watson 1, NE NE NE 36-58n-100w, located on the southwest flank of the structure, 1¼ miles southwest of the Tensleep discovery well, and far out beyond the limits of the field's production from the Frontier.

With surface elevation of 4515 feet, Watson 1 topped the Tensleep sand (Pennsylvanian age) at 5377 feet, encountered saturation in the Tensleep at 5409 feet, and drilled to bottom of Tensleep for completion July 24 at 5377-5581 feet, where initial production was 1440 barrels of 31-gravity oil per day through open 2½-inch tubing, no water having been encountered.

The extension is regarded as definitely proving some 6000 acres as productive in the Tensleep, meaning the ultimate drilling of 150 wells, of which 5 are now completed and 12 drilling. Depths will range from 4850 to 5600 feet to the Tensleep.

On the basis of the discovery well's performance, completed October, 1942, and located near the axis of the structure, Tensleep reserve was estimated at 45,000,000 barrels of heavy oil. The Yale-Watson extension checked 1320 feet lower than the discovery on the

Tensleep and an estimated 1520 feet lower than Tensleep would be topped at the crest of the anticline, giving a closed oil reservoir in the Tensleep of at least 1520 feet.

Conservative estimates are 30,000 barrels per acre in the Tensleep, and considering the 6000 acres located within the contour on which Yale-Watson is located, estimates of the reserve present is materially revised upward to 180,000,000 barrels. This reserve compares favorably with Lance Creek, Salt Creek, and the Wertz-Lost Soldier fields of Wyoming.

This extension well in the opinion of most observers outranks the Elk Basin original Tensleep discovery in importance and is probably the most important well drilled in the Rocky Mountain region since the deep discovery in the Tensleep at Wertz in 1938.

Arkansas added substantially to reserves through completion of a 1½-mile extension of the Atlanta field, Columbia County. The extension well was productive in both the Cotton Valley sand and the Smackover lime, and may forecast Cotton Valley pay over the Atlanta field proper, which so far has only Smackover production. Arkansas also gained a gas field.

California and Colorado each gained a gas field in July but no new oil.

Illinois had an exceptionally long list of discoveries, including 3 small new oil fields, new pay horizons in 4 oil fields, and 11 extensions to fields. One of the new pays was of much importance—the Tar Springs sand found productive in the Dale-Hoodville field, Hamilton County, which covers over 2500 acres. An extension of importance was the completion of a well midway between the Calvin North pool and the Phillipstown pool, White County. The well seems to prove the land between the two pools.

In Kentucky there were 5 oil field discoveries, and 1 gas field was opened.

Kansas gained 5 new oil fields, and one of them was a better-than-average discovery; namely, the Stafford County area opened by Skelly Oil Company's Campbell 1, SW SE SW 34-24s-13w. Recovery of 12,000 barrels per acre is expected.

Michigan gained a small oil field from July prospecting, and Missouri scored 2 new gas producing areas of minor importance.

Oklahoma had a poor month, only 2 oil fields and 1 new oil pay having been discovered. However, one of the new fields was a fair strike. The discovery well, Midco Oil Corporation's Turner Community 1, NE NW NE 24-12n-8e, in the Northeast Dill area, Okfuskee County, was one of the best wells drilled in the state in several months and is expected to show recovery of 14,000 barrels per acre. The well flowed 2445 barrels daily from Cromwell sand at 3496-3504 feet.

South Louisiana's only oil discovery was an extension of the Bayou Sale field, St. Mary Parish, but the district recorded 3 gas discoveries.

North Texas had a typical month, having furnished a considerable number of discoveries but not a great amount of new oil. There were 6 new oil fields found and new pays in 3 fields. West Central Texas gained a gas field, and West Texas 2 small oil fields.

The upper Gulf Coast of Texas gained 2 new distillate fields, and the half-mile eastward extension of the Humble field, Harris County, was regarded as highly important, opening production in the Jackson sand series.

On the lower Texas Coast, new pay horizons were proved in 3 fields, a gas field was extended, and 2 oil fields were given extensions. The Stratton field, Nueces County, was extended 2 miles westerly. That major extension opened thousands of acres to further exploration, and as the sands are prolific, it added materially to reserves.

Discoveries in Southwest Texas included 1 new oil field, new oil pays in 2 fields, and an extension of 1 oil field.

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PRACTICAL OPERATING *Hints* FOR THE PRODUCTION MAN

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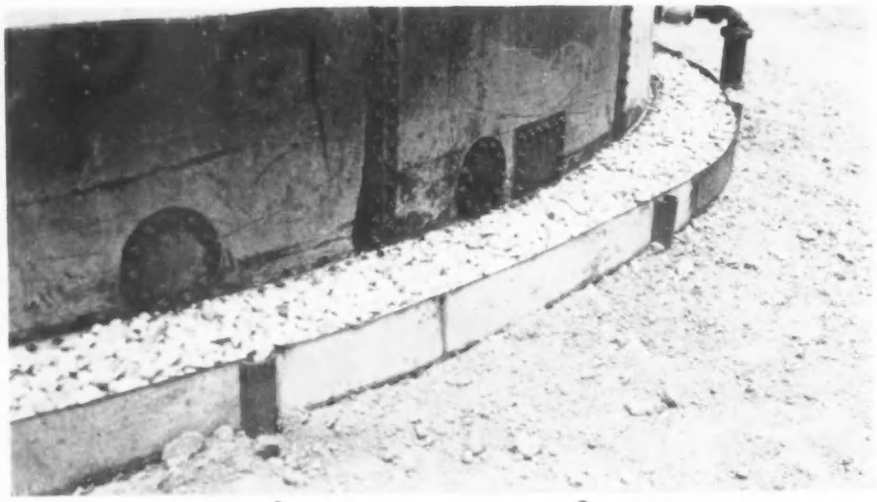
1. TANK SETTINGS

Stone Pad Drainage Protects Bottoms



Slotted posts support the welded steel ring of old tank plate and maintain initial grade of crushed stone or gravel placed for insuring open formation below tank to check corrosion.

WHERE crushed rock or sized gravel is available, it is frequently used as bedding for a tank, to provide the proper drainage from the steel of the bottom and thus to prevent rusting, as well as to carry away any leakage which may occur.

Such a stone base, unless walled in, tends to work out and leave the edge of the tank unsupported, placing excessive strain on the bottom sheets at the point of joining with the first round. To retain this base, one company uses slotted stakes of 3-inch pipe, driving them into the ground around the tank site to extend 6 inches above ground level. In the slots of these stakes is laid a rim or edging of salvaged tank plate, welded to form a circle slightly larger than the tank base. This form is then filled with the rock, levelled, and the tank constructed on it.

The metal edging holds the stone in place, but does not interfere with drainage at the line of contact between it and the ground. If possible, the earth outside the rim is sloped far enough to insure the desired flow beyond the area covered by the stone bedding.

If the pipes are driven to the desired depth first, then cut off with the torch to leave the desired height above grade, the slots may then be burned in the stakes on the proper line to take the edging, and without the danger of burring or mashing which is present if the pipe be slotted before driving.

2. PARAFFIN

Heated Loops Open Clogged Flow Lines

IN THE Cut Bank area, Montana, severe winters augment the paraffin troubles inherent in the type of crude produced, even when flow lines are buried 5 feet below the surface to get below the frost line.

At 500-foot intervals one producer cut his lines, installed in order a tee, a gate and a second tee, bringing each branch line to a point just above the surface, with an ell there and a U of two 5-foot laterals tied together with a union at the end.

An extension handle permitted control of the valve from the surface, the unit normally remaining open with the above-ground loop "floating" on the line. By closing the gate, the stream is forced to detour through the U. A 55-gallon drum, one end cut out and a short stack fitted at the other, was slipped over the U loop to conserve heat, and a gas flame, led to the site through a hose from a nearby gas line, used to heat the lines.

With flow seriously impeded by paraffin, firing each of the series of loops was resorted to, the application of heat being continued until the gauge showed the reestablishment of normal flow pressures. Since the loop is always open to flow, regardless of the position of the gate closure, danger of burning the loop is remote, even if heat be applied without the valve being closed to direct all the stream through it.

Floating on the line, this above-ground loop may be heated within simple muffle furnace when needed.

3. WELDING EQUIPMENT

Motor-Driven Reel Simplifies Hose Care

WELDING hose frequently suffers more wear between jobs than when actually being used to convey compressed gases to the torch. Racks, spools and other devices for retaining the hose are all good, but frequently

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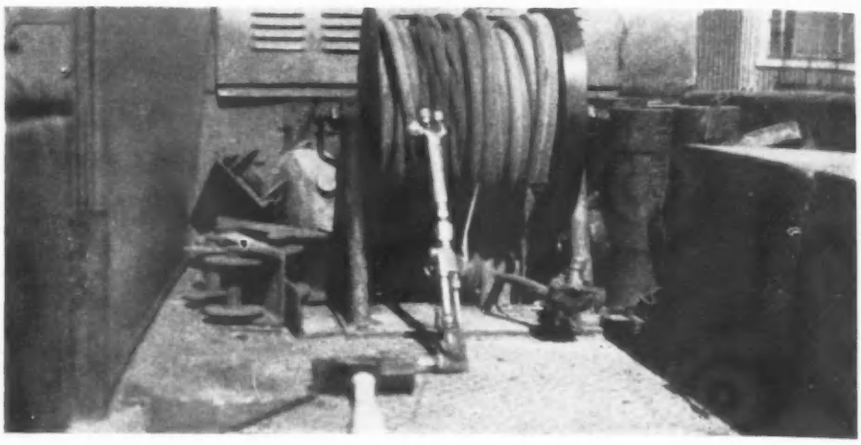


This reel, driven by reclaimed starter motor from truck starting battery, provides push-button storage of the twin hoses, allowing welder supervision of proper spooling as the hose winds in.

are so located as to be almost inaccessible, or involve too much extra work.

One welder devised a reel in the pick-up truck for handling the hose when not actually attached to the cylinders. The reel is mounted ahead of the tool boxes, and is powered with a reclaimed automobile starting motor through single-reduction V-belt drive.

The motor is operated from the truck starting battery, through a conventional starting switch mounted in front of the reel so that the welder may guide the spooling of the twin tubes while the latter tends to cause piston pound or water-hammer as the plungers contact the fluid body in the partially filled cylinders.

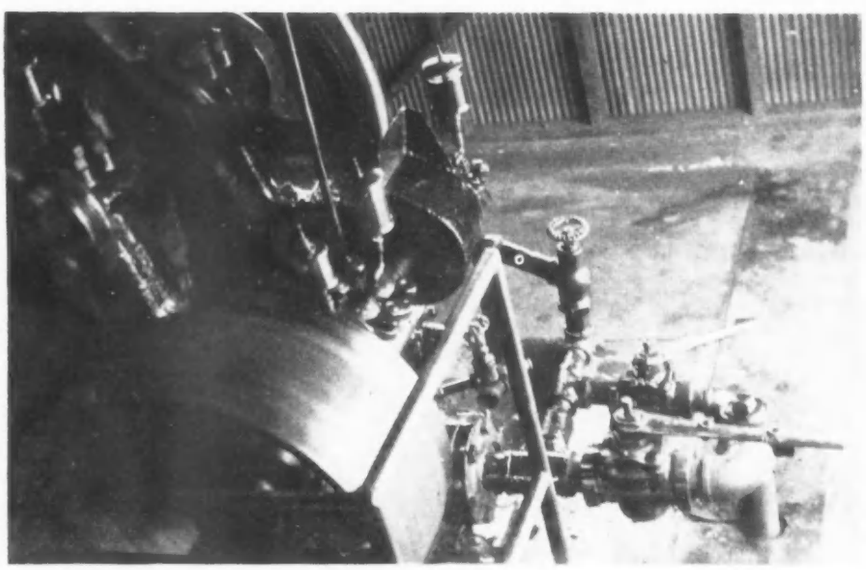
When full intake is assured, regulation is accomplished by return of part of the delivery stream to the reservoir or into the suction line. In the installation shown the discharge line is carried on past the usual (in this instance the 3-inch valve) control, and a second line, with 2-inch quarter-turn valve installed thereon, tied into the suction below the section floor. At the extreme end of the discharge lateral is a riser carrying a spring-controlled relief valve, to protect the pump against accidental overload.

Where a uniform duty is imposed on the pump at less than full capacity, setting of the by-pass unit will permit the required volume and pressure on the main discharge, with pump filling properly and all water-hammer eliminated.

4. WATER SUPPLY

Throttling By-Pass Protects Pump Unit

CONTROLLING the volume and pressure from high-pressure water pumps is more economically done on the discharge than on the intake, as this



Extended discharge header on this pump provides for installation of throttling by-pass unit, as well as usual spring- or shear-pin relief valve and enables full suct on to be used.

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PAW Sets Maximum Output for Most Fields in September

No Improvement in Gasoline Situation in East

Congress Should Investigate OPA, Fell Believes

Many Oil Industry Jobs on New WMC Critical List

By B. F. LINZ
Washington Correspondent

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PRACTICALLY every oil region in the country, except West Texas, will be producing at its maximum efficient capacity during September. Reflecting improved transportation facilities, including operation of the Big-Inch pipe line, and also recent sharp growth in oil consumption, PAW has issued production certifications for September that exceed the peak rate being produced in August by 127,500 barrels. The PAW certifications for the nation total 4,552,100 barrels for all petroleum liquids, of which about 4,300,000 to 4,325,000 barrels are expected to be crude oil. Texas is expected to produce most of the gain, its output being advanced from 1,817,000 to 1,909,000 barrels daily.

Prospects for quick relaxation of gasoline restrictions in the Northeastern States dimmed last week, but OPA is expected to go through with its plan to lift the pleasure-driving ban September 1 despite the opposition of PAW to such a move until inventories have been replenished.

Officials in Washington were encouraged by the light criticism from the affected area of their action in cutting coupon values in Districts 2 and 3, and prepared to go ahead with the plan to lift some of the burden from District 1.

There was little hope, however, that there would be any wholesale lightening of gasoline rationing for some time to come, on the basis of an announcement that the September production allowables set by PAW would put every state except Texas on its maximum productive capacity, bringing home the warnings of a year ago that the country would be facing a shortage of supply by the end of 1943.

Effect upon the oil industry of the War Manpower Commission's new policy of protecting "critical" jobs still had not been fully evaluated, but Washington officials saw in the new list the deferment of important groups in all branches except marketing, through the application to related jobs of the occupations specifically classified.

Maximum Production Ordered in All States Except Texas During September

Placing every oil area in the country except West Texas at its maximum efficient capacity, PAW on August 16 authorized a daily production of 4,552,100 barrels of all petroleum liquids for September, a peak figure 127,500 barrels over the certification for August and 458,900 barrels above the actual daily output in September, 1942.

The increase over August will come from 10 states, whose higher output will be partially offset by lower allowables in 4 states, with 6 states left unchanged.

"The major portion of the increase in the production rate certified for September was again confined to the Southwest," it was explained by Davies. "At the September rates, every oil-producing state except Texas will be producing at or in excess of its maximum efficient capacity. Even in Texas all areas except West Texas will be producing at near the efficient peak.

"It is this condition—the limitations to crude oil availability in the face of enormous and ever-mounting military demand for petroleum—which was the basic reason for the petroleum administrator's action in reducing civilian gasoline consumption in the Middle West and Southwest.

"It is not possible to increase production from fields which are accessible to sufficient transportation, because it would mean production rates higher than efficient capacities. This would result in the irrecoverable loss of reserves and is at the expense of productive capacity in later months, which is not justifiable."

For the coming month, production in District 1 is reduced from 76,500 to 76,300 barrels a day, increases in New York from 14,600 to 14,700 barrels and Pennsylvania from 46,300 to 46,400 barrels being more than offset by a reduction in West Virginia from 15,600 to 15,200 barrels.

District 2 is given a total of 981,500 barrels against 981,000 barrels for the current month, with Kentucky increased from 25,000 to 25,500 barrels and Ohio from 10,000 to 10,300 barrels, while Indiana is reduced from 14,000 to 13,800 barrels and Nebraska from 2100 to 2000 barrels, and Illinois is left unchanged with 222,800 barrels, Kansas with 300,000, Michigan with 60,100 and Oklahoma with 347,000.

Raising the District 3 total from 2,408,800 to 2,530,700 barrels, Texas is increased from 1,817,000 to 1,909,000 barrels, Louisiana from 356,300 to 375,000 barrels, New Mexico from 110,000 to 116,600 barrels and Arkansas frim 75,500 to 80,100 barrels, while Mississippi is left unchanged at 50,000 barrels.

An increase from 98,000 to 98,800 in the allowable for Wyoming will bring the total for District 4 up from 128,300 to 128,600 barrels despite a reduction in Colorado from 7000 to 6500 barrels, Montana being left unchanged with 23,300 barrels.

In District 5, the output for California will be increased from 830,000 to 835,000 barrels.

WPB Authorizes More Oil Country Pipe Sizes

Amending Limitation Order L-211, prescribing standards for the manufacture of oil country tubular goods, at the suggestion of PAW, the War Production Board on August 17 authorized the production of additional sizes of casing and tubing.

Specifically, WPB added an 8⅝-inch, outside diameter, to permitted seamless casing, Grade J-55; 5½, 6⅝, 7, 8⅝ and 10¾ inch sizes to permitted lap-weld casing, and 2, 3 and 4 inch, nominal size, to standard lapweld tubing (non-upset).

It was specified that these sizes apply only to short thread casing and to standard non-upset tubing, and that in all respects other than outside diameter, wall thickness, weight per foot, and threading practice, it shall conform to the requirements of the API specification for casing, drill pipe and tubing.

Elk Hill Basin Leases Sold at Record Price

Public Auction of leases on 262.5 acres of government land in the Elk Hill Basin (Wyoming) field August 12 brought the highest offer ever received by the General Land Office—$1,407,500 bonus plus the royalties, ranging from 12½ to 32 percent, for production, it was announced by the Interior Department August 17.

Representing an average per acre of $5306, the high price was explained by officials as based on the fact that the field is highly productive, with one well producing more than 2000 barrels daily.

More than 150 persons attended the sale, which resulted in the award of leases to Phillips Petroleum Company on 45 acres, for a bonus of $162,000, to Stanolind Oil & Gas Company for 137 acres, for a bonus of $797,500, and 80 acres for $448,000.

Manpower Commission Gives Oil Industry Workers Maximum Protection from Draft

Broad groups of workers in all branches of the oil industry except marketing are covered by the list of "critical" occupations issued August 14 by the War Manpower Commission in an effort to protect essential war industries against interruption by the unrestricted drafting of workers.

General and supervisory executives in the production, transportation, exploration, natural-gas and natural-gasoline branches are included, as well as foremen, craft foremen and similar workers.

In preparing its list, WMC conferred with PAW to determine the jobs which most required protection, and the general classifications announced by WMC are considered as including broad groups, as for instance, in the listing of "geologists," which is expected to be interpreted as including paleontologists, stratigraphers and petrographers as well as persons with no particular field of specialization within geology.

Party chiefs engaged in gravity or electrical prospecting operations, as well as seismograph operations also may be considered to be covered, either under technical personnel or under the term "foremen." Other occupations in this field which will be interpreted to be covered are geophysical and geological draftsmen, managers of oil-well servicing establishments, computers and observers in seismic operations.

With respect to technical personnel it is evident that all technical and professional personnel engaged in research, development, design, construction and process control will be included, and also technical and professional personnel when employed in laboratories not directly a part of refinery operations, provided the work they are carrying on is related to the war effort.

Officials made it clear that the listing of persons as in critical occupations does not mean they are permanently deferable from military service, but it does mean that local draft boards, appeal boards and other agencies of the selective service will be most careful before drafting them.

Short of occupation-wide, industry-wide draft exemption, it was said, the new procedure announced by WMC represents the maximum in protection which can be afforded to groups of persons with particular skills.

PWA to Speed Aviation Gasoline Plant Work

With manpower, rather than materials, the major problem now involved in the construction of new facilities, PAW on August 17 announced organization of a special construction division with the primary objective of speeding up the building of 100-octane aviation gasoline plants.

Max B. Miller, since February, 1942, chief of the refining division's construction section, will be director of the new office.

Originally slowed down by the difficulty of getting materials, particularly valves, in competition with other phases of the war program, the aviation-gasoline project has finally licked that problem only to find itself confronted with a new handicap in the shape of manpower, at the very time when the need for airplane fuel is greater than ever.

"Until recently, the speed with which new plants were constructed and refineries already in operation were converted to 100-octane gasoline manufacture depended principally upon the progress made in Washington in scheduling the delivery of the equipment required for this work," Davies explained in announcing the new division. "Now, the bottleneck has been transferred to the plant sites and an acceleration and expansion of field activities is required."

Supporting Miller as head of the office will be George Gibson and M. B. Fitzgerald as assistant directors; E. H. Kares, director in District 1; J. E. Rouse, director in Districts 2 and 4; D. P. Sturges, director in District 3, and George Prussing, director in District 5.

Section chiefs headquartering in Washington will include Dr. R. Reuter, chemical section; O. J. Thompson, compressor section; L. F. Connell, controlled materials section; H. Clark Goodman, emergency rating section; V. E. Sicks, heat-exchanger section; W. K. McCoy, instrument section; J. E. Hughes, pressure-vessel section; R. P. Wilson, priorities section; E. E. Kerns, pump section; C. V. Marks, redistribution section, and M. C. Jacobs, valves and fittings section. Joseph E. Eldridge will be administrative assistant.

Lieutenant Commander G. N. Jackson, U. S. N., has been assigned to full-time duty with PAW as Navy liaison officer on material problems that involve both organizations.

Forced to Postpone Increase in Value Of East Coast Gasoline Coupons

Forced to postone plans for lifting the pleasure driving ban and increasing the value of gasoline ration coupons in the East, OPA last week took the first step in its equalization program by cutting the value of coupons in Districts 2 and 3 from 4 to 3 gallons per week.

The cut was made on the basis of a certification by PAW, cutting gasoline available for civilians by approximately 15 percent, to 480,000 barrels per day in District 2 and 140,000 barrels per day in District 3.

The gasoline so saved is to be moved to the East to build up inventories and permit the relaxation of present restrictions on September 1, it was explained.

Both OPA and PAW issued strong statements defending the cut and explaining that it has been the determination right from the start to equalize rationing throughout the country as soon as the transportation problem was licked in the East. However, it was said, no change would be made in rationing in Districts 4 and 5, where stocks are ample to meet present demand.

At the same time, however, PAW called attention to the drop in gasoline inventories in Districts 2 and 3 which, it said, would continue as more and more of each barrel of crude goes into the making of war products.

In its statement, OPA apologized for not lifting the Eastern restrictions, but explained the need for adequate inventories before additional consumption could be authorized. Present inventories, Chester Bowles, OPA general manager, said, are only about 36 percent of normal.

Announcement of the proposed relaxation in the Northeastern States appears to have instigated a freer use of gasoline with the result that PAW on August 18 issued a warning that unless drivers were more careful it might not be possible to lift the pleasure-driving ban September 1.

It was announced by Davies that gasoline stocks were drained at a rate of 22,700 barrels daily during the week ended August 14, and that oil inventories had declined to 34.5 percent of normal.

Davies pointed out that the need for building up stocks was imperative in view of the fact that for the preceding three weeks the flow of supplies to the East Coast was considerably below the levels of earlier weeks.

"Part of this is the result of the hurricane in the Gulf Coast during the latter part of July," he explained; part is due to filling the Eastern leg of the Big-Inch pipe line between Morris City, Illinois, and the East Coast refinery terminals.

"Of more concern to the petroleum administration than the temporary decline in total product flow however, is the fact that present civilian consumption of gasoline on the East Coast is in excess of the amount allotted for use during August. The available supply is being substantially overdrawn at the present rate.

"If this trend continues, it will obviously delay the time that more liberal supplies of gasoline can be made available for civilian use. We can supply only so much gasoline, and if gasoline is consumed at a rate in excess of our ability to move it in, it is conclusive that we are not accumulating the inventory required before a more liberal allotment can be made."

Recovering rapidly from the effects of the interruption caused by the opening of the Eastern leg of the Big-Inch and the consequent reassignment of routes, tank car movement to the East Coast jumped 21,000 barrels during the week ended August 14 to a daily average of 928,716 barrels, it was announced.

Present plans of OPA call for the lifting of the pleasure-driving ban on September 1 and an increase in a coupon value from 1½ to 2 gallons later in the month, but the exact date for either order, it was emphasized, will depend upon the inventory situation.

PAW District 4 Office Given Increased Authority

Giving the District 4 regional office increased authority to deal with applications under PAO No. 11 from the Cut Bank (Montana) oil field, PAW has delegated to the director in charge full power to grant or deny requests for exceptions.

It is stipulated, however, that in granting an exception authorizing the drilling of a second well on any quarter-quarter section where the producible well, or wells on adjoining quarter-quarter sections, are so located as to preclude the drilling of a second well under the terms of the August 7 exception granted to the Cut Bank Committee, the following requirements must be met:

1. The drilling unit upon which such well is to be drilled consists of at least half of a quarter-quarter section;
2. The location of the well will be not less than 300 feet from any unit line;
3. The distance between the authorized well or wells and all other drilling or producible wells will be not less than 600 feet;
4. Not more than two drilling or producible wells will be located on any quarter-quarter section, and
5. All separate property interests in the drilling unit are consolidated prior to the commencement of drilling operations.

Congressional Investigation Needed for OPA, Says Fell

Charges made recently by the labor policy committee of OPA that American big oil interests are attempting to put over a billion-and-a-quarter-dollar steal on consumers in asking for a 35-cents-per-barrel increase in the price of crude oil, are so wide-sweeping in their implication that they call for an immediate investigation by Congress, said H. B. Fell, executive vice president of the Independent Petroleum Association of America.

"This is a serious charge," he said, "for it involves the Petroleum Administrator for War, the Honorable Harold L. Ickes, the Petroleum Industry War Council, the Interstate Oil Compact Commission, the National Conference of Regulatory Bodies, many state legislatures and oil and gas conservation commissions and several committees of Congress, all of whom after thorough investigation, have unanimously recommended that OPA grant an increase in crude oil prices. It appears to be an attempt to smear all those who have had the courage to recommend what is essential to the securing and maintaining of an adequate supply of crude petroleum to meet war and essential civilian demand by representatives of a government agency whose actions indicate a definite program to destroy the independent oil producers of this nation.

"The language of the statement and the figures used therein are so similar to those previously used by OPA as to indicate this is merely another statement of OPA presented through certain labor representatives who have permitted their names to be used to support the apparent program of OPA of an economy of scarcity in crude oil and petroleum products.

"To show the inaccuracy of the statement referred to, I desire to point out that 35 cents-per-barrel increase in price, with annual production of around 1,400,000,000 barrels, would only amount to 500 million dollars instead of a billion and a quarter dollars, as stated by the labor policy committee. Their arithmetic must have been poor or else they purposely exaggerated the facts.

"It seems strange that a statement should be issued by the labor policy committee on crude-oil prices since there is nothing to indicate that the men signing the statement have any knowledge of or familiarity with the business of producing crude petroleum or the problems involved therein. It would have seemed more reasonable for OPA to have released the recommendations of thir own District 2 crude oil price advisory committee since the personnel of that committee is fully familiar with crude-oil production and its problems and was appointed by the price administrator for the presumed purpose of advising on crude-oil-price matters. I am sure that the public would be interested in the recommendations of that committee.

"It appears that the labor policy committee of OPA made a statement based on the biased and prejudiced views of OPA without studying the facts. I do not believe the statement made by the committee represents the true point of view of the patriotic labor group of this nation. We are short of oil. That shortage is unquestionably due to inadequate prices for crude oil for which the administrative branch of the federal government is responsible. It now appears that it is up to the Congress of the United States, representative of the people, to take such action as will assist in correcting the serious situation that now confronts our war effort as a result of a shortage of oil."

September Allowables Boost Texas Output To All-Time High of 1,930,000 Barrels

The Texas Railroad Commission has issued its September proration order, providing for production of 1,930,137 barrels daily including 116,000 barrels of condensate. This is an increase of 83,309 barrels over the allowables in effect on August 14, and exceeds PAW recommendations by 21,137 barrels. With the total of crude oil at 1,814,000 barrels an all-time peak output for Texas is set by this new allowable that is only 260,000 barrels under the commission's estimate of producing capacity. Since April, the daily average has continued to swing upward, and September rates will be nearly 500,000 barrels higher than January this year. Until August this year, the state's all-time peak was a daily average of 1,725,600 barrels of crude oil which was reported for the week ended January 24, 1942. However, the total daily average for January, 1942 was only 1,585,100 barrels, but still the highest monthly average until July this year.

The largest increase in allowables for next month, as was anticipated, was in the West Texas area, where fields were raised a total of 73,193 barrels, making a district total of 327,642 barrels.

The East Texas field was increased 12,055 barrels daily. However, this increase resulted from the fact that the field will produce 23 of 30 days in September instead of 23 out of 31 days as it did in August.

Fields in Gulf Coast District 3 were cut a total of 15,616 barrels because of pipe line bottlenecks. These reductions were ordered in fields such as Webster which had been assigned more oil than could be moved.

In District 2, Southwest Texas, the total field allowables were up 14,283 barrels, and in District 4 a raise of 6016 barrels was ordered.

The comparative figures by districts are shown in an accompanying table.

The state generally will be allowed to produce 21 days, and the adjustments for the different fields are set out below:

27 Producing Days: District No. 2—West Mauritz, Harmon and Mayo; District No. 3—Amelia; District No. 4—Orange Grove; District No. 9—Antelope (Miss. Lime), Bindel, Bonita, Chapman-McFarlin, Clingingsmith, Hapgood, Hoefle, Kadane, Kadane Shallow, Mankins, Mueller, Ringgold, Sanders, Scotland, Scotland (Miss. Lime), Wilson, Forestburg, Worsham-Steed, and Rock Crossing (Ellenberger), Cooper, Padgitt (Miss.).

24 Producing Days: District No. 8—Emperor, Goldsmith, and Waddell; District No. 9—Seymour.

23 Producing Days: District No. 6—East Texas.

The following fields are exempt from shutdown:

District No. 1—Darst Creek, Imogene, Loma Alta, Luling-Branyon, Pearsall (Navarro Sand), and Salt Flat.

District No. 2—Cordele, Heyser, Mellon Creek, Mission River, South Caesar, Oakville, Plummer, Victoria, Collier, Poth, Tynan, Fagan, Hondo Creek, Ganado West, White Creek, Porter, Slick (Wilcox), Mauritz, Kittie, and Goebel.

District No. 3—Alief, Arriola, Bammel, Barbers Hill, Batson New, Beaumont West, Boling, Buckeye, Cedar Point, Clay Creek, Conroe, West Conroe, Cotton Lake, Cotton Lake South, Damon Mound, Danbury Dome, Esper-

Texas Net Allowable for September, 1943, By Districts

(Based on twenty-one producing days)

DISTRICT	NET ALLOWABLE Sept. 1	NET ALLOWABLE Aug. 14	Difference
1 Southwest	19,796	19,821	— 25
2 Southwest	121,758	107,475	+14,283
3 Gulf Coast	477,506	493,122	—15,616
4 Southwest	168,841	162,825	+ 6,016
5 East Central	28,543	28,800	— 257
6 East Central	106,429	106,510	— 81
East Texas Field	387,381	375,326	+12,055
7-B West Central	29,293	29,472	— 179
7-C West Central	20,131	19,998	+ 133
8 West Texas	327,642	254,449	+73,193
9 North Texas	130,579	131,010	— 431
10 Panhandle	122,354	122,354	0
Total Net Allowable	1,940,253	1,851,152	+89,101
Less estimated underproduction of 6.5%	126,116	120,324	.....
Total Crude Oil	1,814,137	1,730,828	+83,309
Distillate and Natural Gasoline	116,000	116,000	.....
Total all production	1,930,137	1,846,828	+83,309
PAW Certification	1,909,000	1,817,000	+92,000
Texas over	+21,137	+29,828	.....

son Dome, Eureka Heights, Goose Creek, High Island, Hitchcock, Hull, Humble, Humble Light, Kubela, Livingston, Lockridge, Louise, Mercy, Magnet-Withers, Manvel Oligocene, Markham, Mykawa, Mykawa New, Port Neches, Port Neches West, Orange West, Raccoon Bend Shallow, Raccoon Bend Cockfield, Red Fish Reef, Sandy Point, Stowell, Silsbee, Turtle Bay, Thompson South, West Columbia New, North Withers, North Bay City, Bucksnag, Danbury Dome (5655-foot Sand), Livingston (Sparta Sand), West Silsbee, South Buckeye, West Columbia, Pinehurst, Kirby, North Katy, Fannett, Oyster Bayou, Turtle Bay East, Hastings, South Houston, Thompson, Webster, Clear Lake.

District No. 4—Boyle, Charamousca, Casa Blanca, Clara Driscoll (3800-foot Sand), Garcia, Guerra, Kelsey, Eagle Hill, Kreis, Minnie Bock, Moca, Nichols, North Rincon, Seven Sisters, Sam Fordyce, North Sam Fordyce, Seeligson (Zone 14 and Zone 17), Southland, North Sun, Taft, Plymouth, White Point, East White Point, Cadena, East, Quinto Creek, Dulup, Lockhart, Strake, Tarancahuas, Agua Dulce, Agua Dulce (Sponberg, Harper, and Rivers Sands), Yeager, North Magnolia City, Labbe, and Sejita.

District No. 5—Bazette, Campbell, Mexia, Powell, Richland, Sulphur Bluff, Wortham and Wieland.

District No. 6—Boggy Creek, Cayuga, Kildare, Lone Star, Larissa, Pittsburg, Quitman, Talco, Rodessa, New Hope and Manziel.

District No. 7-B—Grogan, Eastland County, Erath County, Loving, Park Springs, Prichard, Reddin, Reddin Frazier, Stephens County, Markel, Hill (Miss. Lime), and Roark Nail.

District No. 7-C—Beddo, Big Lake, World, Winters, and Shannon.

District No. 8—Hendricks, Howard-Glasscock, Iatan-East Howard, McKee, Robertson, Jamison-Pollard, Leck, Monroe, Taylor Link, Snyder, Embar, Monahans, Kermit, Russell, Yates, Crane Cowden, Fullerton, Mason, Westbrook, Welch, Masterson, Kermit Ellenberger, Keystone Ellenberger, Wheeler (Ellenberger), Vincent, Tobarg, Masterson 3500-foot, Clabberhill, Sand Hills, Holt, and McElroy.

District No. 9—Johnson Pool in Cooke County, Fargo, K-M-A Ellenberger, Hildreth, Hults-Owens, Joy-Mississippi Lime, Antelope, Vogtsberger, Walnut Bend, Berns Ragland (Mississippi Lime), Knox (Miss.), Illinois Bend, Holbert Caddo, Murray, Ellis, Bindel Ellenberger, Walnut Bend Winger, Mueller (Caddo), Allar (Caddo), Dodson, Stephens, Peek, Wolf, McDonald, Midway, Knight, Murray Caddo.

District No. 10—Panhandle Field.

Purchasers Nominate Big Increase In Crude Runs from West Texas

West Texas was in the spotlight in the state-wide proration hearing held by the Texas Railroad Commission in Austin last week. This resulted from the fact that the Petroleum Administration for War had requested that this area be permitted to produce 72,000 barrels daily in September more than it was allowed to produce during August.

Prior to the hearing the commission had been notified that during September, Texas would be expected to produce 1,909,000 barrels; an increase of 92,000 barrels over the August recommendation. The notification asked that 72,000 barrels of the increase be obtained from West Texas fields.

Nominations filed by purchasers totaled 1,982,408 barrels; an increase of 118,630 barrels per day. This included a gain of 59,939 barrels for West Texas, 43,505 barrels for the Gulf Coast and 22,077 barrels for Southwest Texas. The demand for oil from the East Texas field dropped 9884 barrels daily. This was the only decrease in nominations throughout the state.

Nominations of purchasers were revised during the course of the hearing to take up this increase and they indicated that pipe-line facilities would be available to move the oil. Some of these facilities might not be available until late in September.

Gulf Oil Corporation asked for an increase of 8500 barrels for the McElroy field. Ohio Oil Company wanted 18,000 a day more from Yates. Shell Oil Company wanted 11,000 barrels more from various Texas fields.

The evidence offered by Humble Oil & Refining Company, however, seemed to be of most significance. During August the company is taking 36,800 barrels daily. This nomination was increased 27,100 barrels to 63,850 barrels for September.

Use Line to Corpus

Humble, however, will need a total of 104,400 barrels per day from West Texas during September. It will resume operation of the line from West Texas to its Ingleside (Corpus Christi) refinery, taking 55,000 barrels daily through this line more than was taken in August. This oil will find its way into the Big Inch line eventually.

Turning to Southwest Texas, Humble reported that it had increased Greta and Taft nominations 1644 barrels which set September nominations on a par with August allowables. Nominations for Mirando crude were up 565 barrels daily. Humble wanted 5390 barrels more of the Sweden-type oil. It also increased its demand for Refugio light crude in order to operate the Ingleside refinery at about 35,000 barrels daily, the approximate capacity of the plant. Humble wanted 8000 light Refugio crude to be sent by tank car to the Standard Oil Company of Jersey.

In the Gulf Coast area, Humble increased its nominations to some extent largely to meet allowables set by the commission in August. Included in these increases were 6100 barrels for Conroe, 3600 barrels for Hastings; 2600 barrels for Raccoon Bend Cockfield; and 800 barrels for Tomball.

Altogether, Humble nominations totaled 465,299 barrels daily. In addition to this the company is buying oil for which it did not nominate, totaling 50,000 barrels, so that the company is now producing and purchasing or would like to produce and purchase in September, a total of 515,000 barrels daily, about a quarter of the total Texas production.

East Texas Pressure Off

A decline of 4.76 pounds in the East Texas pressures during July was reported by the commission. During that time the field produced an average of 375,328 barrels daily. H. P. Nichols representing the East Texas Oil and Gas Association feared the field would be damaged if production continued at this date. He urged that West Texas be allowed to produce more of the oil.

The East Texas Salt Water Disposal Company reported that during the first 7 months of 1943 the field had produced 72,136,576 barrels of oil and 66,741,393 barrels of water, of which 33,257,640 barrels had been injected.

An average decline of 3.49 pounds in pressure over the field has taken place during that 7-month period. Bryan Payne, president of the company, reported that injection operations are being stepped up, had reached 121,074 barrels daily during the first half of August, and facilities to handle 16,000 barrels per day more are expected to be completed this month.

Several increases were requested for North Texas fields, including a request for Sinclair Refining Company for 700 barrels a day more fron the Winger sand in the Walnut Bend field.

The commission announced a new order fixing higher allowables for new fields as they come in. It provides for 20 barrels per day for each thousand feet of depth, down to and including 15,000 feet. It also provides that this allowance shall apply to as many as five wells within a cluster, regardless of how close they are together. If a sixth well is drilled a half mile away, or more, then the high allowance is granted to this well.

Several pipe line bottle-necks over the state were reported. In each instance, however, a determined effort is being made to solve the problem and additional lines are being laid, or facilities added to existing lines that will enable them to handle more oil.

First-Half Report Shows Big Production Gain

Despite a slight decline in June for the first time this year, crude oil production for the first six months showed an increase of nearly 29,000,000 barrels over the corresponding period in 1942, it was reported last week by the Bureau of Mines.

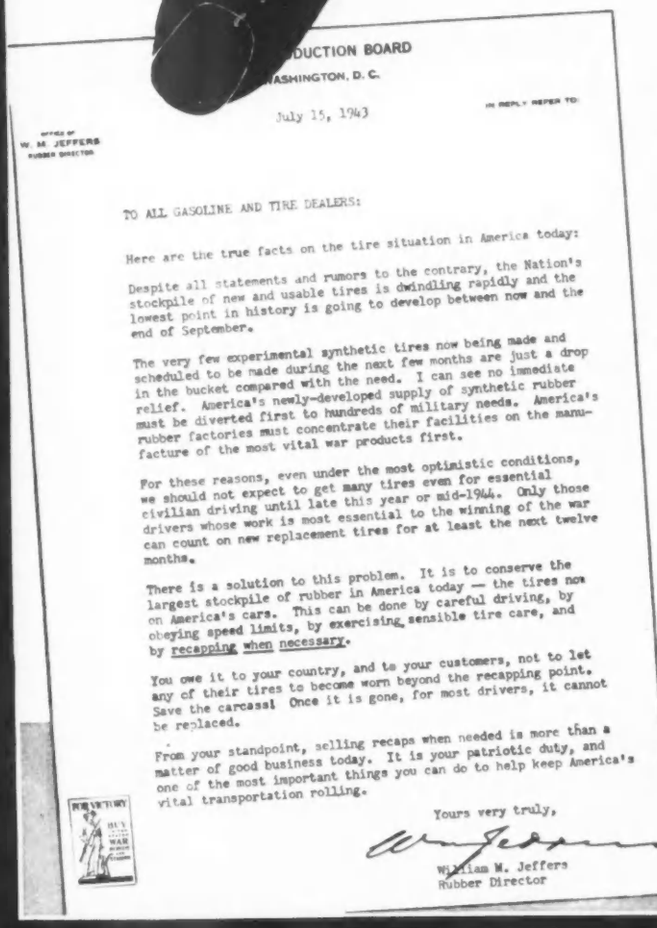
Total domestic output for the first half of the year was 709,342,000 barrels, compared with 680,536,000 barrels in 1942, a daily average of 3,919,000 barrels, against 3,760,000 barrels, the Bureau announced.

June daily production was well above the average for the half-year at 3,977,000 barrels, but was some 18,000 barrels under the May average of 3,995,000 barrels, and the total output was 119,302,000 barrels against 123,854,000 barrels.

Crude runs to stills for the first six months of the year were 668,488,000 barrels against 652,514,000 barrels last year. With demand consistently running ahead of new supply, crude stocks at the close of June were approximately 12,000,000 barrels under the same date last year—250,665,000 barrels against 262,313,000 barrels.

No. 1 IN A SERIES OF ADVERTISEMENTS TO PROMOTE CONSERVATION OF THE TIRES ON AMERICA'S CARS. SPONSORED BY PETROLEUM INDUSTRY WAR COUNCIL

This open letter from America's Rubber Director to every Gasoline Dealer reveals new facts on Tire Situation!



...DUCTION BOARD
...WASHINGTON, D. C.

July 15, 1943

IN REPLY REFER TO:

OFFICE OF
W. M. JEFFERS
RUBBER DIRECTOR

TO ALL GASOLINE AND TIRE DEALERS:

Here are the true facts on the tire situation in America today:

Despite all statements and rumors to the contrary, the Nation's stockpile of new and usable tires is dwindling rapidly and the lowest point in history is going to develop between now and the end of September.

The very few experimental synthetic tires now being made and scheduled to be made during the next few months are just a drop in the bucket compared with the need. I can see no immediate relief. America's newly-developed supply of synthetic rubber must be diverted first to hundreds of military needs. America's rubber factories must concentrate their facilities on the manufacture of the most vital war products first.

For these reasons, even under the most optimistic conditions, we should not expect to get many tires even for essential civilian driving until late this year or mid-1944. Only those drivers whose work is most essential to the winning of the war can count on new replacement tires for at least the next twelve months.

There is a solution to this problem. It is to conserve the largest stockpile of rubber in America today — the tires now on America's cars. This can be done by careful driving, by obeying speed limits, by exercising sensible tire care, and by recapping when necessary.

You owe it to your country, and to your customers, not to let any of their tires to become worn beyond the recapping point. Save the carcass! Once it is gone, for most drivers, it cannot be replaced.

From your standpoint, selling recaps when needed is more than a matter of good business today. It is your patriotic duty, and one of the most important things you can do to help keep America's vital transportation rolling.

Yours very truly,

William M. Jeffers
Rubber Director

THE LETTER AT LEFT, written by W. M. Jeffers, America's Rubber Director, states the cold, unadulterated facts on the tire situation. We want you to read it—every word of it—because it may be the means of keeping you in business.

For, it means that if you and every other gasoline dealer in the United States do not see to it that your customers take good care of their tires, you will not have any customers to service. For once a tire has worn past the re-capping stage, the only thing that tire is good for is the scrap heap.

Keeping your customers rolling becomes more than good business. It is your patriotic duty, and vital to America's transportation!

PETROLEUM INDUSTRY WAR COUNCIL

(Created by The Petroleum Administrator for War)

PRODUCTS CONSERVATION SUB-COMMITTEE

PIPE LINE REVIEW

Line Resumption Brings New Alignments in West Texas

Restoration of Humble Pipe Line Company's combination 10- and 12-inch trunk line from Kemper Terminal, West Texas, to Ingleside, near Corpus Christi, to capacity load of 60,000 barrels daily will involve extensive changes in crude runs by other companies serving West Texas and Southeastern New Mexico. The Kemper-Ingleside carrier has been handling only 6500 barrels of Yates field oil daily to Humble Oil & Refining Company's refinery near San Antonio the past year due to lack of tanker outlets at Ingleside, and during this period the company reduced its nominations in the Permian Basin and shifted runs to other pipe line companies.

Humble Pipe Line Company will discontinue delivering 18,000 barrels of daily runs from Andrews and Ector counties to Atlantic Pipe Line Company, and will recall gathering systems in Lea County, New Mexico.

Humble Pipe Line Company will resume operating its combination 6- and 8-inch trunk line between Wasson field, Texas, and Hobbs, New Mexico, having leased same to Shell Pipe Line Corporation during August. This interstate line will handle 18,000 barrels daily, and about 7000 barrels daily is to be delivered to Shell Pipe Line Corporation at Hobbs.

Humble Pipe Line Company is scheduled to purchase 8500 barrels daily from Gulf Refining Company's gatherings in the McElroy field and 11,000 barrels additional from the Yates field through Ohio Oil Company's field runs.

New England Pipe Line Proposal Rejected by PAW

Determining that it would not materially increase the flow of products to the northeast, PAW on August 19 rejected proposals for construction of a pipe line from Albany, New York, to Boston.

The proposal called for the expenditure of $5,350,000 and some 17,000 tons of steel for a 114-mile 10-inch line from Rensselaer (Albany), New York, to West Boylston, Massachusetts, and a 51-mile 8-inch line from that point to the Boston area, with capacities of about 50,000 and 30,000 barrels daily, respectively.

Advising New England members of Congress and others interested in the project of its position, PAW held that transportation facilities now under construction will be adequate to move all of the increased supply which can reasonably be anticipated.

It held that the proposed line would represent "a very inefficient use" of critical materials and would provide a net increase in delivery capacity to the East Coast of only about 4000 barrels daily and not more than 5500 barrels if sufficient supplies to utilize its full capacity could be made available at Albany.

Pipe-line committees from the industry which studied the project found that it would save three days in tank-car turnaround time from the Gulf Coast to Boston, but the temporary subcommittee on tank cars for District 1 and ODT concluded, respectively, that the net saving in time would be perhaps one day and not more than two days.

BIG LINE DELIVERS

First capacity test of the Eastern leg of the Big-Inch pipe line last week showed a run of 328,000 barrels of crude. Supporting the contention of the designing engineers that the big tube would have a top capacity of at least 325,000 barrels a day during the warm months.

Announcing the results of the test, Davies said the year-round average daily capacity of the Big-Inch is calculated by PAW experts at 300,000 barrels, with a 5 percent leeway, plus or minus, to allow for variations in operating conditions during summer and winter.

The tapping into the line of refineries in the Philadelphia and New York areas has been completed and the flow of oil straight through from Texas is rapidly being stepped up toward the 300,000-barrel mark.

A break in the northern branch of the section leading into New York interrupted deliveries briefly last week, but PAW officials said reports indicated that the loss of oil was not heavy before the break was discovered and the affected section locked off.

This was the second break to occur in the final sections of the line since it was filled with oil. Except that it occurred at a time when every gallon of oil counted, the break was not serious.

Stanolind Building Feeders To Great Lakes Line

Stanolind Pipe Line Company has authorized immediate construction of a 14-mile 4-inch oil line from the Clodine field, Fort Bend County, Texas Gulf Coast, to its Dopslauf station at Fairbanks, where connection will be made with a line that ties into company's Gulf Coast-Great Lakes system at Hufsmith junction. Clodine yields high-gravity oil and has base allowable of 1065 barrels daily.

Stanolind Pipe Line Company will place in operation early this week a 7.58-mile 4-inch oil line from the Mueller twin-pay 4-well pool, Montague County, to Bowie station on its Great Lakes-Gulf Coast system. This extension line can also serve the 2-well Ketchum pool with a 2000-foot lateral, which is scheduled to be installed.

East Texas Heating Oil Moving East by Rail

Removal of 400,000 barrels of heating oil held by War Emergency Pipelines, Inc., at its Longview, Texas terminal since last spring has been started to the East Coast in 50-car lots. This heating oil originally was scheduled to be batched with crude through the big-inch line. Tank cars are now available for its shipment, thus relieving storage needed at Longview to facilitate the handling of mixed grades of crude through the terminal, which has 16 80,000-barrel tanks.

Completion of a 6-mile 12-inch auxiliary line from Weho Junction, near Kilgore, to Longview terminal permits the delivery of three grades of oil simultaneously into the Longview tank farm.

Construction of War Emergency Pipelines, Inc.'s 20-inch products carrier from the Houston-Beaumont district to the East involved an aggregate of 803 miles of line welded, insulated and in the trench as of August 12. Right-of-way has been cleared on 996 miles.

Stanolind Creates Office And Shifts Personnel

Stanolind Oil & Gas Company announces the following shifts in personnel of the various offices, in the Fort Worth division, as a result of the creation of the office of industrial relations:

John J. McCrea, Fort Worth, was named industrial-relations manager for the division which includes North Texas, Panhandle, West Texas, East Texas, and New Mexico. He formerly was production superintendent for East Texas and North Texas. George H. Card, division engineer, succeeds McCrea. L. F. Peterson replaces Card as division engineer and was transferred from Tulsa to Fort Worth.

Lewis Finch, Jr., petroleum engineer in the Fort Worth office, was moved to the North Cowden area as field engineer. W. O. Keller was transferred to Fort Worth, from Odessa to succeed Finch.

W. M. Elias, former field engineer at North Cowden, was moved to Tulsa as division industrial relations manager for Kansas and Oklahoma.

C. B. Carruthers, petroleum engineer was shifted to Tulsa from Fort Worth.

J. E. Wootton, assistant field superintendent in East Texas, was moved to Tulsa as district superintendent for Kansas and Illinois, replacing J. L. Nichols who was named industrial-relations manager for the Rocky Mountain division, with headquarters at Casper, Wyoming.

Clyde Nichols was shifted from Odessa to East Texas as assistant field superintendent, and Vance Sibley was shifted from Brownfield to Odessa.

National Safety Congress in Chicago, October 5-6-7

The National Safety Council announces the annual National Safety Congress to be held in Chicago, October 5, 6 and 7. Last year, the meeting started the machinery of the nation-wide drive to save manpower for warpower. With that campaign in high gear, this year's program will be devoted to accident problems which have a direct bearing on prosecution of the war and winning it. There will be approximately 500 program participants in 200 Congress sessions.

Convention hotels include the Sherman, La Salle and Morrison.

A subject session on Off-the-Job safety is expected to attract a large audience since the realization that more lost time is charged against workers as a result of accidents they suffer while away from their jobs.

Refinery Runs Increased Close to High For Year in Meeting Oil Requirements

Although crude runs to stills were increased in the week ended August 14 almost to the high for this year, the industry was not supplying the heavy demand for its principal products, and there were withdrawals of heavy fuel oil and gasoline from storage, while stocks of light fuel were increased less than normal for the season.

Crude-oil production meanwhile set a new record for this year, and was within 100,000 barrels of the all-time peak reached in early 1942. However, the industry still was drawing on stocks of crude, latest figures of the Bureau of Mines showed.

Crude runs to stills averaged 4,004,000 barrels daily, an increase of 228,000 barrels over the previous week; and the new figure was 280,000 barrels, or 7½ percent, in excess of the runs of 3,724,000 barrels per day in the corresponding week last year. The East Coast and Southwest districts largely accounted for the increase in refinery runs, although there were small gains also in the Appalachian, Middle Western, Upper Mid-Continent, and the Rocky Mountain districts. California refiners reduced runs nominally. The plants of the East Coast-Southwest used 80 percent of capacity, and potential capacity was used in other districts as follows: 70 percent in the Appalachian district 1, 98 percent in Appalachian 2, 88 percent in Indiana-Illinois, 80 percent in Oklahoma-Kansas, 100 percent in Rocky Mountain District 3, 65 percent in Rocky Mountain District 4, and 91 percent in California.

Stocks of residual fuel oil were further reduced 266,000 barrels, after having declined steadily in earlier weeks. Down to 66,448,000 barrels, they were 11,000,000 barrels, or 14 percent, lower than a year previously. The greatest reduction of the week was in California, where 537,000 barrels came from storage, although there were decreases in stocks also in the Appalachian, Mid-Western, Rocky Mountain and Upper Mid-Continent districts. On the other hand, 348,000 barrels went to storage in the East Coast-Southwest districts. The decrease of 266,000 barrels in stocks occurred in spite of the fact that production for the week was 308,000 barrels greater than in the previous week. Most of the increase in production was in the East Coast and Southwest districts, although there were increases in Appalachian 1, Indiana-Illinois, Oklahoma-Kansas, and Rocky Mountain 4.

Despite an increase of 470,000 barrels in production of gas oil and distillate fuel over the previous week, it was possible to add only 230,000 barrels of that product to storage in the week of August 14. The stocks rose to 36,574,000 barrels, but were about 4,000,000 barrels, or 9½ percent, lower than a year previously, when they stood at 40,499,-

Crude Oil Production in the United States

(Estimates compiled by The Oil Weekly. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED August 21	August 14
Arkansas	76,350	76,800
California	786,450	783,500
Long Beach	32,850	32,050
Midway-Sunset	57,100	57,400
Kettleman Hills	41,250	40,200
Wilmington	94,200	93,450
Rest of State	561,050	560,400
Colorado	7,350	6,850
Illinois	206,300	211,300
Salem	27,800	27,900
Louden	33,450	38,100
Other New Pools	134,250	134,300
Old Pools	10,800	11,000
Indiana	13,000	14,800
Kansas	308,100	306,200
Kentucky	23,050	23,650
Louisiana	352,500	352,300
North	83,700	83,550
South	268,800	268,750
Michigan	61,160	55,300
Mississippi	50,400	54,000
Missouri	95	95
Montana	21,200	19,500
Nebraska	1,950	2,000
New Mexico	105,150	104,150
New York	14,150	13,750
Ohio	8,950	8,850
Oklahoma	329,250	331,450
Oklahoma City	55,100	55,900
Seminole Area	73,850	74,100
Rest of State	200,300	201,450
Pennsylvania	44,900	43,400
Tennessee	30	30
Texas	1,712,600	1,711,850
Upper Gulf Coast	474,600	474,350
East Texas Field	371,150	371,200
Rest of Eastern Texas	130,200	130,150
Lower Gulf Coast	150,400	150,400
Southwest Texas	71,950	71,900
South Central Texas	16,950	16,950
West Texas	258,550	258,300
North Texas	140,600	140,450
Panhandle	98,200	98,150
Utah	10	10
West Virginia	8,600	8,200
Wyoming	101,050	101,200
Total United States	4,232,595	4,229,185

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Week Ended	Runs to Stills Barrels Daily	Week Ended	Crude Stocks Barrels	Week Ended	Gasoline Stocks Barrels	Week Ended	Gas Oil & Distillate Stocks Barrels	Week Ended	Residual Fuel Oil Stocks Barrels	Week Ended
Highs:												
1939	3,910	8- 5	3,650	10-21	278,607	5-26	87,769	4-22	39,562	10-28	116,237	8-26
1940	3,890	3-16	3,690	6-22	265,865	8-31	102,817	4-20	49,051	10-19	109,135	9-14
1941	[1]4,337	11-22	[1]4,120	10-18	266,187	3-29	99,727	3-29	[3]54,983	11-15	102,448	1- 4
1942	[1]4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	49,861	11-14	95,857	1- 3
1943	4,239	8-14	4,015	6-26	245,752	5-29	94,159	3-20	42,913	1- 2	72,881	1- 2
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 8
1940	3,335	11-30	3,370	1- 6	237,339	1-27	79,847	11- 9	23,551	4- 6	102,344	2-10
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-13	232,191	1- 9	72,505	8-14	30,732	4- 3	66,448	8-14

TRENDS OF 1942 AND 1943

Trends in Week Ended:	Crude Oil Production Daily	Runs to Stills Daily	Stocks Week End	Gasoline Production Weekly	Stocks Week End	Gas Oil & Distillate Production Weekly	Stocks Week End	Residual Fuel Production Weekly	Stocks Week End
1942:									
January 3	4,038	3,961	244,440	13,797	92,987	3,855	49,357	6,918	95,857
January 31	3,871	3,848	250,740	13,292	97,810	3,817	40,674	6,640	91,189
February 28	4,016	3,675	259,373	12,131	105,635	3,799	34,547	6,813	88,285
March 28	3,820	3,667	263,208	11,663	105,624	3,661	31,756	6,344	83,045
April 25	3,581	3,506	257,073	10,535	102,897	3,267	29,240	6,869	81,107
May 30	3,877	3,522	255,023	10,478	95,355	3,034	31,384	6,993	79,628
June 27	3,719	3,581	253,364	10,713	88,396	3,549	32,851	6,615	77,304
July 25	3,691	3,658	249,262	10,864	82,281	3,647	35,966	6,796	77,816
August 29	3,964	3,697	249,007	11,300	80,831	.....	42,060	.....	78,034
September 26	3,909	3,802	242,785	10,954	80,550	.....	45,945	.....	78,943
October 31	3,901	3,731	239,266	11,153	79,159	.....	48,131	.....	79,166
November 28	3,878	3,736	234,850	11,269	78,854	.....	49,739	.....	77,796
1943:									
January 2	3,871	3,734	233,938	10,957	82,420	4,285	42,913	7,683	72,881
January 30	3,826	3,698	233,863	10,339	88,830	3,888	37,057	7,452	70,763
February 27	3,873	3,709	235,217	10,566	93,157	4,230	32,939	7,839	70,140
March 27	3,896	3,742	239,126	10,231	94,079	3,541	30,980	8,018	67,938
April 24	3,913	3,737	242,035	10,583	91,001	3,954	31,142	8,168	67,455
May 29	3,970	4,679	245,752	10,656	83,937	3,798	32,274	7,672	67,682
June 26	3,955	4,015	242,657	11,092	79,589	3,876	34,044	8,126	67,960
July 31	4,133	3,788	238,420	11,127	74,977	3,765	36,363	8,478	66,877
August 7	4,203	3,776	237,382	10,791	73,368	3,677	36,344	7,850	66,714
August 14, 1943	**4,239**	**4,004**	.....	**11,672**	**72,505**	**4,147**	**36,574**	**8,158**	**66,448**
August 15, 1942	3,893	3,724	[4]246,975	11,099	79,190	3,850	40,499	6,875	77,368
Change:									
In week	+36	+228	—1,038	+881	—863	+470	+230	+308	—266
In year	+346	+280	—9,593	+573	—6,685	+297	—3,925	+1,283	—10,920
In year	+8.8%	+7.5%	—3.8%	+5.1%	—8.4%	+7.7%	—9.6%	+18.6%	—14.1%

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks, August 8, 1942

000 barrels. California added 132,000 barrels of the light fuel oils to storage during the week, and other increases include those of 53,000 barrels in Appalachian 2, 228,000 barrels in Indiana-Illinois, and 10,000 barrels in Rocky Mountain District 4. Production of gas oil and distillate fuel totalled 4,147,000 barrels during the week, compared with 3,677,000 the previous week. The new production volume was 297,000 barrels, or 7.7 percent, in excess of the 3,850,000 barrels produced in the week of August 15, 1942. East Coast-Southwest districts produced 370,000 barrels more than in the previous week, and there were increases also in the Appalachian, Mid-West and California districts. Production was off, however, in Oklahoma-Kansas and Rocky Mountain districts.

Stocks of finished and unfinished gasoline were reduced 863,000 barrels in the week of August 14, having come down to 72,505,000 barrels. This was a smaller reduction than in the previous week. The new total was 6,685,000 barrels, or 8½ percent, less than the 79,190,000 barrels on hand a year previously. The East Coast and Southwest districts accounted for 507,000 barrels of the withdrawal from storage, and California took out 216,000 barrels. Only the Appalachian District 2 and Mid-West added to storage. The comparatively small reduction in stocks for the week was made possible by the fact that production was 881,000 barrels more than in the previous week, in totalling 11,672,000 barrels. The latter quantity was 573,000 barrels, or 5 percent, more than the 11,099,000 barrels produced in the week of August 15, last year. The gain in production was accounted for largely by the East Coast and the Southwest, which produced 750,000 barrels more than in the previous week in turning out 5,399,000 barrels. In all other districts the changes in output from the previous week were comparatively small.

Crude oil production averaged 4,239,000 barrels daily in the week of August 14, a new high for this year. This figure was within 100,000 barrels of the 4,337,000 barrels which represented the all-time record. The week's production was 36,000 barrels above that in the previous week. It was 346,000 barrels, or nearly 9 percent, in excess of the 3,893,000 barrels produced in the corresponding week last year.

Crude oil stocks declined 1,038,000 barrels from July 31 to August 7, having totalled 237,382,000 barrels on the latter date. The new total was approximately 9½ million barrels, or 4 percent, less than the 246,975,000 barrels on hand a year before. Crude stocks now are only about 8 million barrels above the 20-year low which was reached in October, 1939.

Small Rise Puts Production At New High for This Year

Production of crude oil in the United States averaged 4,232,595 barrels per day in the week ended August 21, thereby setting a new record for this year. The production was only about 100,000 barrels a day under the all-time peak. It was 3410 barrels a day greater than in the previous week.

In most of the producing states, there were only slight changes from the week before. California was up from 783,500 barrels daily in the week ended August 14 to 786,450 daily in the week of August 21. Kansas rose from 306,200 to 308,100, Louisiana from 352,300 to 352,500, Michigan from 55,300 to 61,160, Montana from 19,500 to 21,200, New Mexico from 104,150 to 105,150, Pennsylvania from 43,400 to 44,900, Texas from 1,711,850 to 1,712,600.

Arkansas declined from 76,800 to 76,350, Illinois from 211,300 to 206,300, Indiana from 14,800 to 13,000, Kentucky from 23,650 to 23,050, Mississippi from 54,000 to 50,400, Oklahoma from 331,450 to 329,250, Wyoming from 101,200 to 101,050.

Markets Generally Tight; Gasoline Prices Advanced

Although the extended rationing program is intended to make available more gasoline for the East Coast district, reports in the area last week indicated that stocks still were very low. Suppliers stated that they were still having difficulty in meeting the needs of their customers.

The tightness of supplies was attested by the latest data on the American Petroleum Institute on stocks in the district available for civilian use, which showed a further decline. These supplies of gasoline, light fuel oil, and heavy fuel oil available for civilian use dropped to 34.5 percent of normal on August 14 from 34.7 percent on August 7. There has been some improvement, however, in recent months. The index stood at 31.5 on July 3 and had been to a low point of 25.5 on May 8, 1943. On September 12, 1942, the Eastern stocks were 60.1 percent of normal.

In Western Pennsylvania, there is continued steady demand for all products, with supplies scarce. No changes in quotations have been reported. Neutral oils have further gained strength and are firm at present quoted prices.

In the Middle West the markets continued exceptionally tight. Some refiners of the district have advanced their quotations on gasoline to the highs of prevailing ranges, the general trend being toward ceiling prices on all grades of gasoline. Shortages have been responsible for the advances, and both independent and major refiners have participated in the raising of quotations.

Throughout the Mid-Continent, the market for gasoline is extremely strong. In numerous sections of the region, refiners have advanced their quotations on various grades of gasoline, and some plant owners have raised all grades.

Shortage of supplies and the reduction in consumer rations were given as reasons for upward adjustment of gasoline prices.

Extreme shortage of gasoline was reported on the Gulf Coast, in reflection of very low inventories. The supplies had been drawn upon very heavily in supplying local demand on the eve of the reduction in consumers' rations in the Southwest.

Regional Meeting of AIME To Be Held in Chicago

The fall regional meeting of A.I.M.E. will be held at the Hotel Sherman, Chicago, October 16-20. The meeting is designed to appeal to members especially interested in metals, nonmetallic minerals and fuels, and is being planned so members can attend with a minimum loss of time. Advance registrations have been urged by the arrangements committee in order that all who attend may be assured of accommodations at hotel headquarters.

Atlantic Pays $2,750,000 For East Texas Leases

Atlantic Refining Company has materially increased its supply of crude in the East Texas field through purchase of American Liberty Oil Company's interest in 112 wells and the extensive gathering system of the American Liberty Pipe Line Company, which was serving 72 additional wells. The consideration was reported as $2,750,000 cash and the cancellation of financial obligations of the selling companies. Eighty-nine of the wells are on tracts 4-G, 5-G and 7-G, aggregating 202 acres of the Sabine River bed in Gregg County. These river-bed tracts were acquired by American Liberty Oil Company June 15, 1934, from Rhodes Drilling Company, John E. Farrell and Corzelius Brothers, along with 64 wells completed at that time. The State of Texas holds mineral rights under river-bed leases, receiving one fourth royalty, and also received a bonus of $5,125 per well out of an added royalty of 1/16. Atlantic Refining Company's purchase was effective August 12.

Bulk of the gathering system parallels lines held by Atlantic Pipe Line Company, thus permitting the salvaging of miles of small pipe that is in great demand in other districts.

Gulf Oil Corporation continues to add to its holdings in the field, and its latest purchase involves payment of $500,000 cash to Great Plains Oil & Gas Company, Tulsa, for undivided one-half interest in the E. A. Anderson 13-4/7-acre lease and the B. C. Christian 24-acre lease, both in the G. W. Cooper Survey, Gregg County, with 6 wells on each, and gross base allowable of 252 barrels daily. Gulf recently acquired Fred L. Adams and George W. Lyles' Taylor Anderson 62½-acre lease, John Ruddle Survey, Gregg County, with 14 wells for reported consideration of $1,400,000 cash. All wells were drilled between October, 1931, and November, 1935.

Hamill and Smith, Houston, recently purchased from John Wrather et al 39 wells of 12.29 acres in the Kilgore townsite, including 30 wells on the I&GN Ry. 11.7-acre fee, with base allowable of 700 barrels daily. The wells on the railroad right-of-way sold for $30,000 cash each, while the densely drilled town lot wells netted $29,000 each.

Sunray and Superior Oils Enter Merger Agreement

Stockholders of Sunray Oil Corporation and Superior Oil Corporation of Delaware will be asked to adopt an agreement of merger which has been entered into by the boards of directors of both companies.

Under the agreement, Superior would be merged into Sunray on the basis of 6/10 of a share of Sunray common stock for each share of Superior. Preferred and common stocks of Sunray will not be changed, and the name of the company will continue to be Sunray Oil Corporation.

Announcement of the agreement was made in New York by R. Elmo Thompson, president of Superior, and C. H. Wright, president of Sunray.

C. C. VIRGIN, The Texas Company lease man at Mattoon, Illinois, has returned to Tulsa as assistant lease man, while Donald M. Rounds of Mattoon succeeds Virgin at Mattoon.

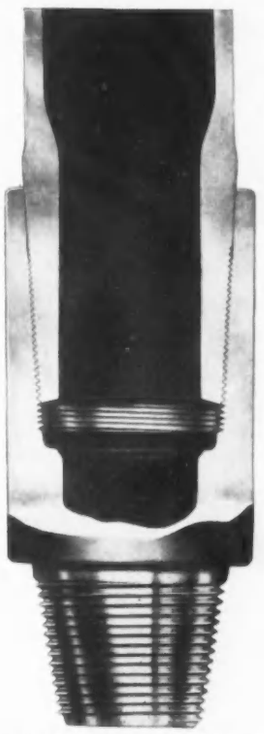
NOW— MORE THAN EVER BEFORE

Specify

"Pittsburgh Special Double Grip" Rotary Drill Pipe and Tool Joints!

Now that it's harder to get drill pipe and tool joints, make sure your drilling string lasts longer by specifying "Pittsburgh Special Double Grip" Rotary Drill Pipe and Tool Joints.

Look at these features! At least 35% greater contact surface for increased strength. Accurately machined "land" area beyond threads in line with thread taper increases gripping power and provides the patented "Pittsburgh Special Double Grip" Shoulder Seal. Joint is absolutely sealed against abrasive sands, salt water and sulphur water and relieves last engaged threads of destructive vibrations, "whipping" and "biting." You get all the advantages of shoulder welding without any of the disadvantages.



"Pittsburgh Special Double Grip" Internal Upset Drill Pipe and Mating Tool Joint.

"Pittsburgh Special Double Grip" External Upset-Internal Flush Drill Pipe with Mating Tool Joint.

GENERAL DIMENSIONS

TABLE A

Size	2 3/8"	2 7/8"	3 1/2"	4 1/2"	5 5/16"	6 5/8"
A	2.506"	3.006"	3.631"	4.631"	5.694"	6.756"
B	1"	1 1/4"	1 1/2"	2 1/4"	2 3/4"	3 1/2"
C	3 1/8"	3 3/4"	4 1/4"	5 1/2"	6 3/4"	7 3/4"
Standard Length	16"	17"	18"	20"	22"	24"
Net Wt., Lbs.	27	34	41	74	122	159

TABLE B

Size	3 1/2"	4 1/2"	5 5/16"	6 5/8"
A	3.631"	4.631"	5.694"	6.756"
B	2 7/16"	2 13/16"-3" 3 3/16"	3 1/16"-4"	5"
C	4 5/8"	5 3/4"	7"	8"
Standard Length	18"	20"	22"	24"
Net Weight, Lbs.	53	83	122	156

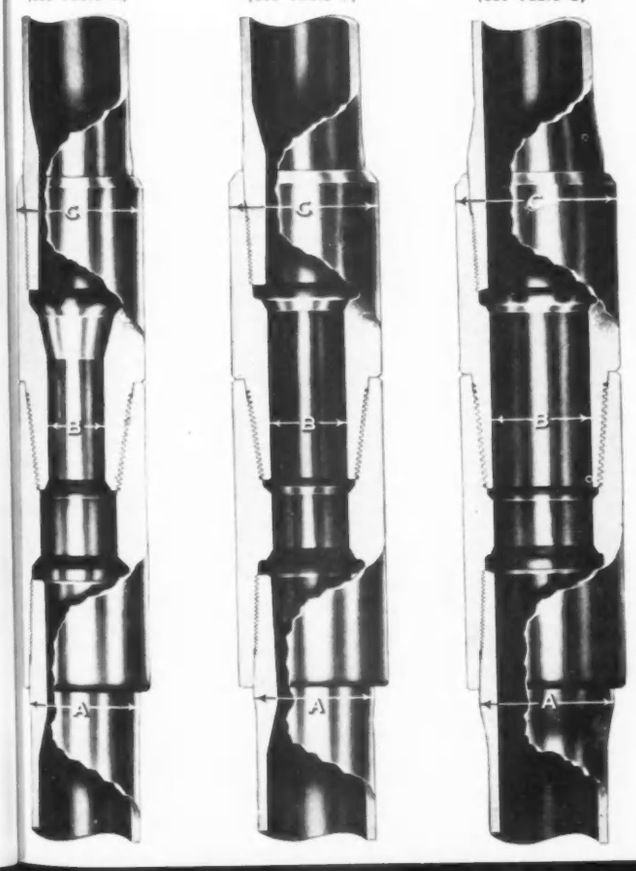
TABLE C

Size	2 3/8"	2 7/8"	3 1/2"	4"	4 1/2"	5 5/16"	6 5/8"
A	2.787"	3.349"	3.955"	4.631"	5.131"	6.193"	7.256"
B	1 3/4"	2 1/16"	2 11/16"	3 1/32"	3 3/4"	4 11/16"	5 29/32"
C	3 3/16"	4 1/16"	4 3/4"	5 3/4"	6 1/16"	7 5/16"	8 1/2"
Std. Lgth.	16"	17"	18"	20"	20"	22"	24"
Net Wt., Lbs.	25	37	51	83	89	129	163

Regular A.P.I. Tool Joint with "Pittsburgh Special Double Grip" Pipe Threads. (See Table A)

A.P.I. Full Hole Tool Joint with "Pittsburgh Special Double Grip" Pipe Threads. (See Table B)

External Upset-Internal Flush Tool Joint with "Pittsburgh Special Double Grip" Pipe Threads. (See Table C)



Both "Pittsburgh Special Double Grip" Rotary Drill Pipe and Tool Joints are available with either right or left hand threads; internal upset or external upset-internal flush. Regular A.P.I. thread lengths, taper, form of threads and pipe sizes permit make up with corresponding A.P.I. specification pipe or tool joints. However, the benefits of the patented "Pittsburgh Special Double Grip" features are not then obtained.

"Pittsburgh Special Double Grip" Tool Joints are easily "bucked on" in any well equipped field shop.

Find out today how little this extra "life insurance" and protection for your drilling string cost.

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International Developments

Downed Allied Fliers Are Well Treated by Rumanians

An international petroleum expert just out of Bucharest reported in Berne that the American air raid on Ploesti oil fields cut Rumanian oil production by a little more than 40 percent.

More than half the planes brought down over Rumanian territory were hit in or about the Ploesti region, and many made crash landings in the immediate neighborhood. Though many of the crew members were injured, few were killed.

An incident occurred between the German and Rumanian military authorities immediately after the raid. German officers demanded the surrender of the American prisoners to their authority. Some of the Americans were seized from under the Rumanians' noses. A stern note from Bucharest to Berlin recalling facts of national sovereignty, however, soon clarified the matter, and the men were returned to Bucharest for treatment.

Those less seriously injured, but still hospitalized and able to have visitors, were receiving what amounted to "royal welcome," according to the petroleum expert, who mentioned the "untiring efforts of Rumanian ladies' committees in the capital to show a non-partisan spirit." Gifts of cigarettes, chocolates and books are being collected in equitable proportions for the Americans as well as for wounded Rumanians.

Roumania Oil Center Blasted by United States Bombers

Three Ninth United States Army Air Force B-24 Liberators streak through gap in smoke (upper right) as refinery at Ploesti, oil region of Roumania, is left severely damaged. Most of the damage done here was accomplished with delayed action bombs that took effect after planes had departed. Ploesti is the most important oil region under German control. (U. S. Army Air Force photo from International News sound photo).

Wildcat to Be Drilled East of Turner Valley

Early resumption of drilling on the New Ranchmen's site, 18 miles east of Turner Valley, is presaged in announcement of financing of development. Maynard Davies, president and managing director of New Ranchmen's Oil Company, says the financing is expected to assure not only the drilling of the No. 1 well to the depth at which the productive limestone is anticipated but will also provide funds to proceed with the work on a well which was previously drilled to within a few hundred feet of its objective.

Dr. S. E. Sipper, the consultant geologist who spotted the site for the New Ranchmen's No. 1, stated that the Madison limestone formation will be reached at approximately 8000 feet. Drilling contracts have been let to Newell & Chandler, who have put down many of the wells in the nearby Turner Valley, and are active in extensive drilling operations throughout the western oil fields of Canada.

The Old Ranchmen's well, in the same area, which remained uncompleted because of operational difficulties largely due to inadequate equipment and insufficient financing, nevertheless presented a most encouraging picture. Drilled 7200 feet, it encountered definite oil occurrences at six different points in the last thousand feet, although falling short by several hundred feet of reaching the Madison limestone, which is the best oil productive strata in the Alberta fields.

The site for the New Ranchmen's well, where drilling is now to be resumed, was selected from information supplied from the log of this earlier operation, and on a comprehensive seismic survey of the area.

Overproduction of Gas At Turner Valley Alleged

Calgary, Lethbridge, and other communities on the gas company's distribution system in Alberta may be deprived of gas for an indefinite period if a court order, sought by Model Oils, Ltd., is granted.

Model Oils, Ltd., claims Royalite Oil Company, Ltd., has been producing gas in excess of its allowable yield authorized by the Alberta Petroleum and Natural Gas Conservation Board.

Model seeks a mandamus which would require the conservation board to prohibit Royalite from producing in excess of its allowable yield of gas.

Practically all the gas turned into the gas company's system is obtained from Royalite and Royalite subsidiary wells in Turner Valley.

In the past, the penalty for producing gas in excess of the amount authorized by the conservation board has been the closing in of the wells owned by the offending company for periods set by the board.

Model claims that Royalite produced excess gas by draining gas away from Model well locations and that it suffered injury thereby.

Royalite contends that if excess gas

LIBERTY

versus

Compulsion

We are engaged in the greatest war in history—to determine whether our nation and other nations founded on liberty and the dignity of the individual shall endure.

The struggle is between two totally opposite ideologies. One is based on brute force, the top gang keeping its power by compulsion. The other is based on logic and persuasion, the leaders obtaining office by vote and remaining there only by the consent of the governed. Under regimentation creative research congeals and the masses produce and fight as sullen slaves. Under democracy creative research is stimulated and mass production multiplies. Soldiers go to battle with unbeatable spirit because of the determination of free men to maintain that priceless gift which they have won after ages of fighting and which they will never give up . . . the gift of liberty.

When the war is won and we return to peace time pursuits there will still be a big job to do in rehabilitating a broken world. People everywhere will look to America. Our business men and leaders will have a great responsibility and a great opportunity. In keeping with this thought the Mission Manufacturing Company is planning many advancements and improvements in its products for the benefit of oil men who will be busy to a degree never before experienced. In the meantime war comes first.

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and to insure a strong and stable United States when the war is over.

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has been produced, this was necessary because of heavy demands for gas by war plants such as the Alberta Nitrogen Company plant and by Wartime Oils, Ltd., which is financing a drilling program in Turner Valley. Royalite opposes granting of the order on the ground that it would deprive Calgary and other communities of gas and would seriously affect the war effort.

Vermilion Field Active; Treating Plant Reopened

Renewed development of the Vermilion oil field in Alberta in view of the reopening of the treating plant two months ago is reported.

Oil circles also are watching with close interest the development of drilling programs in the Wainwright, Athabaska and Rocky Mountain House regions.

Increasing the commercial output of the Vermilion field, O. H. Hollingsworth's Holly 1 well was placed on production July 10. It pumped at the rate of 240 barrels per day.

One of the pioneer operators in the field, Hollingsworth and associates drilled Richardson 1 in September, 1940.

A well to test the underlying Devonian limestone is reportedly planned by Cannar Oils. Officials of the C.N.R. have visited the field to discuss the location. Cannar 5 recently was completed to the oil sand in three days drilling time. General Petroleum Ltd. also has drilled a well in the same area in three days.

Canadian Oil Trickle Outside Turner Valley

If it were not for Turner Valley, Canada would only be producing a mere trickle of oil.

Turner Valley contributes 95.3 percent of all the crude petroleum and natural gasoline produced in Canada, according to figures issued by the Dominion Bureau of Statistics.

The Valley field plus other oil producing areas in Alberta contributes 96.6 percent of the Dominion's total yield. The remaining 3.4 percent comes from Ontario, New Brunswick and Fort Norman.

The percentages are based on May production figures. The yield in May was 872,812 barrels of which 843,431 barrels were from Alberta, including 832,219 barrels from Turner Valley.

The Dominion yield in May, 1942, 892,034 barrels, and the Dominion yield for the first five months of this year was 4,211,751 barrels compared with 4,383,292 barrels in the same period of last year.

Alberta's Crude Output Is Down This Year

Production of crude oil in Alberta, Canada, for the first six months of this year stands at 4,643,264 barrels, down 6.9 percent from 4,988,473 barrels produced in the like period of last year.

Monthly production figures for the first six months of this year, with comparative figures for the same months of 1942, are as follows:

	1943	1942
January	804,662	830,163
February	719,901	803,212
March	788,075	878,715
April	767,788	807,924
May	805,386	855,041
June	757,452	813,418
Total 6 Months	4,643,264	4,988,473

Canadian Laboratory To Study Oil Shales

To carry on research into methods for treatment of oil shale and its many by-products, Mining Research Corporation, consulting engineers, have established a laboratory in Toronto. This move reflects the growing activity and interest in the oil-bearing shales of the Moose River basin, James Bay area of Northern Ontario.

The laboratory will be equipped with a pilot plant permitting quantitative and qualitative analyses of the shales with the object of establishing a plant on a commercial scale in the district. Geologists associated with Mining Research Corporation have visited and reported on the new development and expansion of operations is anticipated in the near future. Diamond drilling is being carried on to block out the oil shales and plans are to use oil drilling rigs to test for crude oil at about 1500 feet.

Turner Valley Well Gets Best Allowable on Record

British Dominion Oil & Development Company's No. 5, Turner Valley's newest and most northerly producer, has been granted an allowable of 950 barrels daily by the Alberta Conservation Board. This is the highest allowable ever granted any well in Turner Valley under the "Brown plan" which has as its top rating 1000 barrels a day.

Derricks are being erected for wells Nos. 6 and 7 and drilling will be started within a week. These will be financed jointly by British Dominion Oil & Development Company and Home Oil Company.

Royalty Payments to Be Deferred by Alberta

The province of Alberta will defer half of its royalty from Wartime Oils Ltd. wells until such time as Wartime Oils loans have been repaid from production at the wells.

Wartime Oils Ltd., a government company, proposes to finance wells to be drilled in Turner Valley.

One of the requirements under the wartime program is that the payment of not less than half of the land-owner's royalty shall be postponed until the government company has recovered the amount of its advances together with interest at 3½ percent.

Several Big Companies in Western Canada Oil Search

Several of the world's larger oil companies are now engaged in a search for oil sources in Western Canada, with operations chiefly centered in Alberta.

Imperial Oil Company, subsidiary of Standard Oil Company (New Jersey), rates as the largest operator in the search for oil. Under its own name, or through such subsidiaries as the Northwest Company, Royalite Oil Company and Norcanois Oil and Gas, is actively drilling in Saskatchewan, the Taber, Turner Valley, Wildcat Hills, Nordegg and Walton Creek areas of Alberta, and is the big operator in the Northwest Territories.

Dominion Oil Company, a subsidiary of Standard Oil Company of California, is concentrating its drilling in the Taber field, with one rig working in the vicinity of the year-old discovery well, Taber-Province 1, currently pumping over 200 barrels of oil daily.

McColl Frontenac Oil Company is concentrating on the southeastern corner of Alberta, controlling almost 750,000 acres east and south of Taber and along the United States boundary lines. Shell Oil Company, Gulf Oil Corporation and Socony-Vacuum Oil Company are others at work, mainly using seismic equipment.

Doing Geological Work West of Fort St. John

Prospecting for oil is being carried out by several geological parties in the territory west of Fort St. John, British Columbia.

Although no definite reports have been received, it is believed the Hudson Hope area, west of Fort St. John, is well-stocked with oil. Included in the prospecting parties in the area is a group of geological men from one of the largest oil companies in North America.

The country is rugged and a thorough search of the area has never been made.

Several years ago, in the Pouce Coupe district, west of Dawson Creek and south of Fort St. John, a large flow of oil was struck but not developed. It is understood that prospecting and drilling recently have unearthed oil and gas.

Canada's Largest Producer Completed at Turner Valley

Reports of a big strike at the British Dominion 5 well were confirmed when officials said the well had produced for hours at a rate of 200 barrels of oil hourly, or 4500 barrels a day.

The well, believed to be the largest completed in Canada, is the farthest north producer in the proven area of Turner Valley.

All available tankage has been filled and the well has been shut down.

Producer Gas Units Used Extensively in India

About 10,000 gas-producer units for motor vehicles have already been made and sold in India, according to the foreign press. They are used largely for trucks and busses.

The producer-gas units now are being manufactured by 55 concerns in India, it is stated. The factories for making them are concentrated mainly in the United Provinces and in Madras, Bombay, and Punjab Provinces.

Many Vehicles in Brazil Converted to Gasogenes

Latest available figures show 10,547 motor vehicles in the states of Rio and Sao Paulo, Brazil, equipped with producer gas units. These include 8463 in Sao Paulo and 2084 in Rio.

The road vehicles converted to gasogenes, by types, have been as herewith indicated, in the two states.

Vehicle	State of Rio	State of Sao Paulo	Total
Passenger Cars	1,001	4,715	5,716
Trucks	962	3,710	4,672
Station Wagons	40	....	40
Busses	51	31	82
Miscellaneous	30	7	37
Total	2,084	8,463	10,547

U. S. Field Operations

Illinois Basin

New Fields in Jasper and Jefferson Counties

Big Chief Drilling Company has completed Heap 1, SE SE SW 28-6n-5e, Jasper County, as the discovery well of the Bogota pool. In its initial 24-hour test the well pumped 152 barrels of oil from McClosky lime at 3213 feet, following a 1000-gallon acid treatment.

Jefferson County: Nash Redwine's Gilbert 1, NE SE NW 25-4s-2e, has been completed with an initial test of 10 barrels of oil a day following a 1000-gallon acid treatment in the St. Louis lime. The test is ¼ mile west of the old Ina field where one producer was completed in McClosky lime with an initial of 150 barrels a day in 1938.

Wayne County: Pure Oil Company's Porter 1, NW SW 23-1s-7e, has been completed to extend the Boyleston pool 1½ miles north. It pumped 12 barrels of oil and 24 barrels of water in 24 hours from Rosiclare lime at 3257 feet.

Richland County: Pure Oil Company's Rusk 1, SW SE 1-3n-9e, a wildcat, pumped 118 barrels of oil in 24 hours from McClosky lime at 3055 feet to extend the Schnell North pool 1½ miles north.

Clay County: Obering's McGee 1, NE NE SW 30-5n-7e, a wildcat, is showing for a pool opener in McClosky lime. A drill-stem test at 2847 feet recovered gas in 15 minutes and 1850 feet of oil in 60 minutes. The operators were running electrical survey preparatory to setting casing.

Bond County: Davison and Associates' Birkenstock 1, NE NW NE 8-4n-3w, a wildcat which two weeks ago was considered a possible pool opener, has been abandoned at 1062 feet, through the Benoist sand which carried a light show of oil.

Kentucky

Kingwood Oil Company's Lilly 1, NW NW NW 21-O-19, wildcat ¼-mile southwest of Morganfield, in Union County, set casing to test McClosky saturation at 2704-09 feet, where 1-hour drill-stem test recovered 240 feet of oil, 10 feet of oil-cut mud and 100 feet of salt water.

Kingwood Oil Company and N. V. Duncan's Deacon 1, SE SE 16-Q-20, 3 miles north of Uniontown, wildcat, has rotary derrick up.

Carter Oil Company's Russelberg 2, SE SW SE 24-P-21, 3 miles north of Waverly, had 12 barrels of oil and 93 barrels of salt water in 11 hours from Waltersburg sand at 1723-29 feet. From McClosky this well made 332 barrels a day on pump.

Carter Oil Company's O'Nan 1, 13-O-19, completed in Mansfield sand at 1410-26 feet for initial production of 35 barrels of oil and 25 barrels of salt water on pump.

Sun Oil Company's J. W. Hite 1, NW NE NE 4-O-21, wildcat, was cleaning out to test McClosky at 2598-2600 feet. Hole is bottomed at 2601 feet.

Henderson County: Cherry-Kidd and Ashland Oil & Refining Company's Starkey 1, NE SE NW 1-Q-23, wildcat 3 miles north of Henderson, was drilling at 1516 feet.

Indiana

A. C. Thomas' F. A. Bailey 1, SW SE 28-4s-13w, semi-wildcat 2½ miles northeast of New Harmony, is a location in Posey County.

Sinclair-Wyoming Oil Company's Grein 1, NE NE SE 26-8s-14w, wildcat across the Ohio River from Uniontown, Kentucky, was abandoned at 2873 feet, with drill-stem test of O'Hara section at 2679-86 feet showing gas in 20 minutes.

Kansas

Rice County Well Either New Pool or Extension

Stanolind Oil & Gas Company has a new pool or a lengthy extension of the Bowman pool with Bowman 1, NEc SW 22-19s-10w, Rice County. The well has been assigned a temporary potential of 76 barrels daily from Arbuckle lime topped at 3277 feet and bottomed at 3301 feet. In preliminary tests the well swabbed 15 barrels of oil per hour after 1000 gallons of acid. The well was later given an additional 2000 gallons of acid.

Rooks County: Phillips Petroleum Company's Thomp 1, C SE SE 9-9s-17w, a wildcat, was drilling deeper into the Arbuckle lime after swabbing 25 gallons of oil per hour with total depth 3489 feet. Drill entered the Arbuckle at 3473 feet.

Dickinson County: Ingling & Parker apparently have a pool opener at Miller 1, SE SW 30-14s-1e, south of Solomon in western Dickinson County. A drill-stem test of Burgess sand with total depth of 2492 feet, showed 720 feet of oil and 180 feet of oil-cut mud in 50 minutes. Operators run casing preparatory to testing.

McPherson County: Bay Petroleum Company is giving the Lindsborg field a southern extension with Lundstrum 1, CWL SW SE 36-17s-4w, which had good shows in Viola lime topped at 3381 feet.

Ellsworth County: Lauck & Moncrief recovered a promising show of oil in Arbuckle lime at Frevert 1, NE SW 11-17s-10w, an Ellsworth County wildcat, and have set pipe for test. Pay was recovered at 3217-21 feet.

Gove County: Barnsdall Oil Company has staked location for Inloes 1, NE NW 11-11s-26w, in wildcat territory in northwestern Kansas. The well is scheduled to test the deep zones.

Sedgwick County: Nelson Drilling Company is testing oil showings in the Kansas City lime at Harrow 1, NE SE 24-25s-2w, a wildcat near Bentley. The show was recovered in cuttings at 2882 feet.

Reno County: Cities Service Oil Company is attempting to kill gas in Maremore 1, SWc 32-23s-10w, in the Peace Creek pool. When perforated to test Viola lime at 3692-3700 feet the well showed 2,500,000 feet of gas. After a squeeze job, it flowed 40 barrels of oil and no water in 13 hours and was still making approximately 750,000 feet of gas.

Oklahoma

Noble County Well Indicates Producer

A Noble County discovery in the Otoe City area is indicated as a result of findings in the second Wilcox sand at Barnsdall Oil Company's Johnson Ranch 1, C SW NE 25-22n-1e. The sand was picked up at 4690 feet and stained sand with a strong odor of oil and gas was recovered. Additional coring was scheduled after repairs to drilling equipment.

Logan County: Danciger Oil Refineries recovered a scum of oil and salt water after perforating Wilcox sand at McPeek 1, C NE SE 18-18n-3w, a wildcat test east of the Lovell pool. Operators plan to squeeze off water and perforate again higher up the hole.

Pottawatomie County: Stanolind Oil & Gas Company may extend the North McCloud pool of Lincoln County into Pottawatomie County with Wilcox sand production at Quincy Hood 1, NWc 9-11n-2e. Oil and salt water were recovered in a drill-stem test at 5919-27 feet. The company will continue testing upon completion of a fishing job.

Atlantic Refining Company has completed Muck 1, NE NE SW 24-10n-3e, a Hunton lime discovery well near Shawnee, for 62 barrels of oil daily through tubing. Pipe was perforated at 5110-56 feet.

Cities Service Oil Company's Lamirand 1, NE SE SW 27-6n-2e, a recent discovery, flowed 103 barrels of oil in 7 hours after Simpson dolomite was treated with 3000 gallons of acid. It was then shut in for storage. Pay was at 5118-30 feet.

Noble County: Thomas N. Berry and associates continue testing Wood 1, NE SE NW 1-20n-1w, a discovery three miles east of the Perry gas field. Perforated in the Tonkawa series at 3494-98 feet, the well made 12 barrels of fluid per hour, half water and half oil, and 2,000,000 feet of gas. It may be completed as a gas well. Meanwhile the operators are continuing tests at the discovery and planning location for another well in the area.

Caddo County: Gulf Oil Corporation has run pipe to test 185 feet of Medrano sand pay at Sherritt 1, SE NW NE 33-6n-10w, an extension for the West Cement field of Caddo County. The pay will be perforated from 5770 to 5955 feet. The well has a greater volume of pay than any other well yet drilled in the area.

Garvin County: The Texas Company's Cox 1, SE SE NW 25-4n-1w, a northwestern extension for the Pauls Valley field, averaged 52 barrels of oil per hour for 12 hours through tubing on a recent test and then was shut in. Bottomed at 4067 feet, production is from bromide.

Okfuskee County: Sunray Oil Company is preparing to shoot the Cromwell sand at Edwards 1, NEc NW 24-12n-8e, a west offset to the discovery well of the Northeast Dill pool. During bailing operations after plug was drilled, the well filled up 1500 feet with high-gravity oil.

North Texas

Young County Discovery Produces from Marble Falls

Southeastern Young County added an oil discovery from Marble Falls sand when C. A. Lupton and Jerome McLester's Johnson 1, 660 feet out of NWc Block 3, Brazos River Indian Reservation Survey, A1417, developed a hole full of oil in 62 minutes, then flowed 42 barrels of oil in 25 minutes through casing. The well was shut in for tankage and to set liner account of open hole below 3700 feet. Marble Falls was entered at 3990 feet, and penetrated about 3 feet with tools. This discovery passed up 1,000,000 feet of gas and 10 to 15 barrels of oil daily in Upper Strawn at 3027-53 feet.

The Western Young County prospect of Standard Oil Company of Texas and Hanlon & Buchanan, Wells 1, TE&L 738, tested 8 barrels of oil daily after 15-quart nitro shot in Basal Strawn at 3574-79 feet. British American Oil Producing Company's Barrett-Carpenter 1, E. W. Sergeant Survey, northeast corner of the county, tested dry in Mississippi at 5180-94 feet, and is deepening to Ellenburger.

Wilbarger County: Humble Oil & Refining Company's Schmoker 1, H&TC 114, Block 14, 5-1/3 miles north of production, was swabbing 1 barrel of fluid hourly while recovering acid load after treating with 5000 gallons through perforations at 4585-4645 feet. Previous test through perforations at 4695-4713 and 4725-60 feet yielded 2½ barrels of oil hourly on swab, having plugged back from Ellenburger at 6430-49 feet.

Wildcat Failures: Widespread prospecting exacted a toll of deep failures the past week, and the deepest involved R. H. Dearing & Sons' Fields 1, Montague County, abandoned at 8002 feet. In Archer County, Chapman & McFarlin's Turbeville 1 halted in Ellenburger at 5405-5500 feet, while E. C. Norwood et al's Kinder 1 abandoned in Mississippi at 5760-5811 feet. Continental Oil Company's Hilburn 1, South Clay County, tested water in Ellenburger at 6200-6470 feet. Jack County's contribution was Joe A. Worsham et al's Cherryholmes 1, quitting at 5252 feet.

FOUR TESTED WAYS to make Brake Lining Last Longer

The suggestions given at the right are presented by Johns-Manville as proved methods of conserving drilling equipment, and of increasing the life and efficiency of brake linings.

1. **Check brake and clutch adjustment regularly** . . . to guard against unequal wear on friction materials.
2. **Don't box-in brakes and clutches** . . . Assure maximum heat dissipation by providing increased air flow.
3. **True up rims whenever scored or heat-checked,** to prevent unusually rapid wear of linings and facings.
4. **Don't try to control friction by using oil, clay or other such substances** on linings.

For further suggestions and for tips on how to secure longer life and higher efficiency from Packings, Insulations, Roofings and Refractory Cements, write for the new J-M Manual, "101 Suggested Good Operating Practices," Johns-Manville, 22 East 40th Street, New York 16, N. Y.

And for maximum efficiency, start rigs right* with JM PRODUCTS

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West Texas

East Permian Basin Wildcat Campaign Growing

The east portion of the Permian Basin is being assigned a substantial share of the enlarged wildcat campaign that has been under way in the district for some months. More than a dozen tests are active, or contracted for prompt drilling, including 4 Ordovician projects in Dawson, Mitchell, Sterling and Borden counties. Gulf Oil Corporation's Dean 1, Dawson County, is the deepest of the Ellenburger tests, and was drilling lime at 6555 feet. In the same county, Darby Petroleum Company's Harris 1, a 5500-foot project, was drilling lime at 4610 feet, while Seaboard Oil Company is starting Spraberry 1 with a 6000-foot contract.

Borden County is to receive its first Ordovician test through the drilling of Northern Ordnance, Inc.'s Clayton-Johnson 1. This firm is also completing contract for B. C. Mann's 10,000-acre block in southwestern Howard County that calls for 3 Permian tests, and possibly an Ordovician prospect on the high point of the 7-mile length block. A new Permian prospect for Borden County involves W. D. Casebolt et al's 10,600-acre block, centering near H&TC 230, Block 97.

Andrews County: Union Oil Company's Biles 1, 4½ miles northwest of Fullerton field and producing from slightly deeper zone in Clear Fork, fulfilled its earlier promise of making a discovery in flowing 240 barrels of 42-gravity oil in 36 hours through 3-inch drill pipe. Production is from perforations in lower pay at 7431-41 feet. Additional perforations will be made by stages in the middle and upper zones. Magnolia Pipe Line Company has authorized extension of a 5-mile 4-inch line from its Fullerton field station to serve this well, as competitive drilling is projected for the area.

Gaines County: Magnolia Petroleum Company and Atlantic Refining Company's H. & J. 1-459, ½-mile south of the Russell pool's 7772-foot discovery pumper, is duplicating the performance of the initial well in recovering 150 feet of oil- and gas-cut mud on drill-stem tests at 7430-7531 feet and 7528-7645 feet. A third test was pending at 7624-7721 feet. Acid will be required to make a producer unless a deeper and more productive Clear Fork zone is uncovered in drilling to water. Continental Oil Company's Jones 1-A, 4 miles west

He recommends a STEAM BATH for chain belts

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Rex M. E. says *all* chains should be cleaned frequently—those with oil-tight guards need the least attention, but those with loose guards need attention most often of all.

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CHAIN BELT COMPANY OF MILWAUKEE

by north of the Russell pool discovery, was drilling dry lime at 7345 feet and nearing critical depth in Clear Fork, topped at 5910 feet with elevation of 3658 feet, being 295 feet high to H. & J. 1-459. Jones 1-A encountered thinning below San Andres, topped at 4560 feet, or only 15 feet high. Stanolind Oil & Gas Company's American Warehouse 15, Cedar Lake field, was idle for rig repairs in lime and chert at 11,051 feet. Amerada Petroleum Corporation's Robertson 6, east edge of Seminole field, was drilling dry lime without shows at 9245 feet.

Upton County: Texas Pacific Coal & Oil Company's Lane 52-A, McCamey field, averaging 10 feet of new hole daily in drilling hard chert at 6847 feet in Devonian, topped at 6450 feet.

East Texas

Manziel Production Extended Two Directions

Expansion of the Manziel field, most recent of three Paluxy strikes in Wood County, was made to the west and southeast, giving the area a total of five wells and an inside failure. Shell Oil Company's Sheppard 1, southeast extension that is structurally low through having cut a fault in the top section of Paluxy, swabbed 145 barrels of 21-gravity oil and 15 barrels of oil and water on a 12-hour test. Production is from perforations at 6375-88 feet, with the hole bottomed in dry Glen Rose at 6610-65 feet.

Shell Oil Company's Bailey 1, west offset to the discovery, sidetracked drill pipe lost at 6368 feet, and in re-drilling Paluxy logged broken oil sand at 6274-97 feet then set pipe on bottom at 6325 feet. Sand section is sufficient to make a pumper.

Oak Grove: Jackson, Fisher & Fields are starting the third Woodbine test on this central Wood County prospect to be known as McCarley 1-B. It is near the partnership's McCarley 1, which was junked in trying to run pipe for completion in promising Woodbine saturation after failing to produce in Paluxy. Their Quitman National Bank 1, situated 1½ miles east, over-stepped the structure in logging Woodbine water sand at 5700-6016 feet.

Smackover Projects: Sun Oil Company's Rutledge 1, Kaufman County, entered broken salt series at 9833 feet, possibly still in Buckner, topped at 9102 feet, and was coring solid salt at 9911 feet. A thick bed of salt would indicate the wildcat has reached the Eagle Mills with the Smackover absent. Smackover lime, or 10,000 feet is the objective of H. L. Brown and Ridley Wheeler's Gibson 1, Navarro County wildcat spotted in most easterly northeast corner of Julian Fontenov Survey, 8½ miles north by west of Cayuga deep production. This company has an 11,300-acre block taken on subsurface gained from Woodbine failures, including several that continue to show gas through mudded hole. Phillips Petroleum Company and Magnolia Petroleum Company have acreage within the block, which is otherwise solid.

Wildcats: Roger Lacy et al's Paul 1, Van Zandt County and near southeast edge of Fruitvale, cancelled out a Paluxy prospect in logging salt water sand at 6388-92 feet with elevation of 496 feet. In Houston County, Geier Bros. Inc.-Sunray Oil Company and H. H. Wegener's Spence 1, 4 miles west of Grapeland, abandoned in Woodbine water sand at 6096-6137 feet.

Camp County: Minor northeast extension for Pittsburg 5-well pool materialized when Harry S. Moss et al's Venters-Lockett-Magnolia 1-B, Robt. Wyers Survey, flowed 43 barrels of oil in 3 hours after recovering circulating oil. Production is from perforations at 7992-8020 and 8064-99 feet in Pettit, with the hole bottomed in dry Travis Peak at 8137-40 feet.

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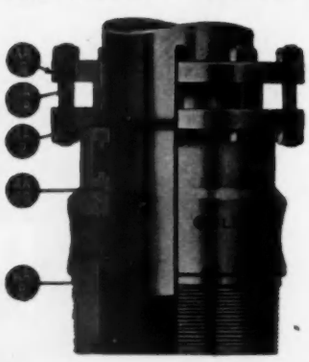

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Katy Gas Field to Serve As Distillate Study Area

A broad program of research concerned with some of the complex problems in distillate-well production is to get under way this month in the Katy Gas Field Unit near Houston. Sponsored by the Natural Gasoline Association of America, it is a cooperative project in which a large number of oil companies having distillate interests are participating.

In speaking of the project, J. W. Vaiden, Skelly Oil Company, Tulsa, N.G.A.A. president, said the usual approach to these problems through committee work had had to be set aside temporarily. "The manpower shortage and transportation handicaps in these times have made usual procedure rather slow and difficult, especially field testing, where committeemen leave their own work for weeks at a time. Accordingly, the association has retained G. G. Brown and D. L. Katz, University of Michigan, together with several of their assistants, on a full-time basis to conduct the field studies. Unquestionably, the results of this work will be of great importance to the distillate industry and will be of value in all cycling, repressuring and pressure maintenance operations."

Principal objective of the tests is a simple and practical method for sampling a two-phase gas stream. Experiments are to be made with various types of equipment through a pressure range of 1000 to 2500 pounds on streams containing up to about 10 percent liquid phase by volume. Other experiments are to be made with new methods for determining the specific gravity and liquid content of such gases. Elaborate, full-scale equipment is being set up at the No. 9 well of the Katy Unit under the immediate supervision of W. A. Van Hook and Carl J. Mantzell, Stanolind Oil & Gas Company. General plan of the project and the testing layout was the work of C. R. Williams, Chicago Corporation, N.G.A.A. vice president, High Pressure Gas Division; R. J. Sullivan, Humble Oil & Refining Company; M. R. Church, Shell Oil Company; W. L. Bowser, Atlantic Refining Company; J. R. Butler, Cotton Valley Operators Committee, and D. A. Sillers, Lone Star Gas Company.

Aside from the companies already mentioned, others which will participate and observe the tests include, J. S. Abercrombie Company, Arkansas Fuel Oil Company, Carter Oil Company, Cities Service Oil Company, Continental Oil Company, Gulf Plains Corporation, Houston Oil Company of Texas, La Gloria Corporation, Lockhart Oil Company of Texas, Magnolia Petroleum Company, Ohio Oil Company, Phillips Petroleum Company, Sinclair Prairie Oil Company, Shamrock Oil & Gas Corporation, Superior Oil Company, The Texas Company and United Gas Pipe Line Company.

HUMBLE OIL & REFINING COMPANY announces the following personnel changes:

Virgil O. Harris, district petroleum engineer, was transferred from Hawkins to Talco as farm boss.

Jack M. Shepherd was transferred from the Houston office to Hawkins as district petroleum engineer.

James E. Barwick, district superintendent, was transferred from Magnet to Maurbro.

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MUSKEGON, MICHIGAN

Southwest Texas

New Field Indicated by Starr County Wildcat

Starr County is back in the development spotlight with a wildcat well indicating a new field. This area is constantly gaining attention as a major producing region with new fields and sands being opened.

The latest apparent discovery is Continental Oil Company's Cameron 1 two miles northeast of the Rincon field. The company drilled the well to 5005 feet with 6-inch casing set to that depth. Perforations were then made at 4722-25 feet for a squeeze job after running an electrical survey of the hole. Several oil and gas sands were reported logged between 4200 feet and 5000 feet. Continental has acreage surrounding the wildcat with Dee Davenport also holding acreage in the area.

Sun Oil Company is resuming coring below 8500 feet in Laurel 3, wildcat on the northwest flank of North Sun field, Starr County. This well tried to blow out at 8490 feet where a gas-distillate sand was topped. Operators pumped cement in the hole to control the pressure with the top of plug set at 5330 feet. The well is one-half mile southwest of 4500-foot sand production on the northwest flank of the field.

Jim Hogg County: The Texas Company is making flow tests in Hartman 2, a wildcat four miles southwest of the Colorado field that has indicated opening of a new field. Prior to setting production pipe, operators recovered 50 feet of oily mud and some salt water at 2298-2308 feet. Total depth is 2310 feet with 5½-inch casing set to 2296 feet.

The first good commercial production in the Weil field of Jim Hogg County is indicated with Sun Oil Company recovering 1100 feet of 45 gravity oil and 100 feet of oil-cut mud on a drill stem test at 5060-65 feet. The well is Weil Bros. 6, 6300 feet east of the field discovery well and one mile southeast of Weil 2, a dry hole.

Bee County: A new gas field with possible oil is assured in a wildcat three miles southeast of Mineral townsite in Transwestern Oil Company's and H. B. Zachry's Holzmark 1. Operators are now cutting and pulling the drill stem after the well blew out while taking a core at 8309 feet, total depth, and sticking the pipe. The well flowed several million cubic feet of gas daily through ⅛-inch choke on a blowout preventer. The blowout has created considerable interest since it is located between the old shallow Voss and Foley fields in the northwest portion of the county where Wilcox sand prospects have been receiving considerable attention.

GEORGE F. SMITH, vice president of Continental Oil Company, Ponca City, Oklahoma, has retired under the company's annuity plan. Smith joined the company in 1907 as an accountant in Denver. He served successively as division accountant in Denver and Salt Lake City, was made assistant secretary and assistant treasurer in 1912, served as director from 1913 to 1929, and was elected secretary and treasurer in 1919. He was elected vice president in 1937.

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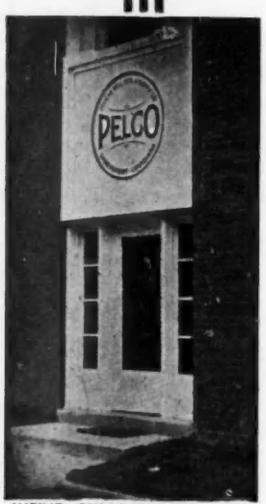

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Dyersdale Field Extended Quarter Mile to West

Operators are completing a potential gauge on the first well drilled in the Dyersdale field area of Harris County in some time. The producer is Edwin Nielsen's Reichardt 1 and is one-quarter mile west of production. With the well bottomed at 4069 feet in sand topped at 4058 feet, 5½-inch casing was set on bottom and then perforations made, the test being made through ⅛-inch choke with 300 pounds pressure on the tubing. This field produces from the Miocene and Frio sands, with the bulk of production coming from the Frio. The new extension is in Samuel Kelly survey, abstract 495. More drilling may be started in the area soon in an attempt to extend production to other sides of the field.

Discovery: W. Stewart Boyle and John G. Mayo are drilling and coring deeper in Appling 1, wildcat one mile west of Louise that is opening a new field. On a drill stem test at 4085-4118 feet, operators recovered more than 200 feet of pipe oil with considerable pressure. This apparent discovery is on a 40-acre unit in IRR survey 7, abstract 260. It will be drilled to contract depth and plugged back for the production test.

Wildcats: Wildcatting is showing definite signs of gaining on the Texas Gulf Coast with a number of deep wells projected for immediate drilling. Standard of Texas has staked State 1-105 1½ miles offshore at Smith's Point in Galveston Bay of Chambers County. The well is on a 640-acre tract and is projected to 9500 feet.

Humble Oil & Refining Company is preparing to drill two more Wilcox wildcats, the first being Goolsbee 1 in Warren area of Tyler County. The test is projected to 8500 feet and is located in BBB&C survey. The other Wilcox well is Carter 3-B two miles north of Segno field production in Polk County. It is projected to 10,500 feet and drilling is scheduled to start immediately.

South Louisiana

Three Deep Tests Planned for Gabriel

A flurry of new development is in store for the south side of the St. Gabriel field in St. Landry Parish with George Echols and J. Ray McDermott announcing they will drill three wells to 10,500 feet. These locations follow the recent opening of a new deep pay 1½ miles south of the regular field productions. Echols' new sand well was Natalbany 1-J which flowed 37 barrels of condensate daily through various chokes from perforations at 9700-04 feet. The new locations are Natalbany 1-A in Section 13-9s-1e and Natalbany 1-F and 2-F in Section 12-9s-1e. Echols will use company rig to drill these wells.

Wildcats: Union Oil Company is preparing to drill a 12,000-foot wildcat in north part of Whitelake field in Vermilion Parish. It is State-Whitelake 1-A

and is in the lake, T-14s-2w. Loffland Brothers has drilling contract. Union owns all the production in the field.

Acadia Parish: Amerada Petroleum Corporation is giving a major extension to the Lewisburg field with Daigle 1, Section 75-7s-3e, flowing at the rate of 118 barrels of 59.5-gravity condensate daily from perforations at 10,306-16 feet. Operators have squeezed these perforations and will attempt to shut off the gas in the flow. Total depth is 10,501 feet. This field was discovered in 1941 with Stanolind Oil & Gas Company's Tweedel 1 in Section 77-7s-3e, flowing distillate. Other tests drilled in the area have produced distillate. Amerada's producer is one mile south of the older wells.

Evangeline Parish: Danciger Oil Refineries is making further tests on Haas 1, wildcat that is opening the Reddell field. The well, in Section 22-4s-1w, has been flowing some oil through perforations at 12,116-122 feet using ¼- and ⅜-inch chokes, however, the flow was unsatisfactory and operators are preparing to test additional sands higher in the hole. A large number of possible oil and gas bearing sands were found in this well, both in the Sparta and Wilcox sections. The hole is bottomed at 12,206 feet with 5½-inch casing set on bottom.

Terrebonne Parish: Humble Oil & Refining Company has set surface pipe at 2564 feet in Continental Land and Fur 4, Section 13-18s-12e, wildcat in Deer Island area. This well, in an area that previously showed gas and distillate in wells, will be drilled to the 12,000-foot level or maybe deeper.

Rocky Mountain Area

Dakota Oil at Cole Creek; Gas Strike at East Kevin

Wyoming and Montana each came through with a discovery last week, one a new pay zone in the Cole Creek field, Wyoming, the other a gas strike at East Kevin, Montana. Two Tensleep tests starting on Wyoming structures proved in upper zones for gas production, bring the total to four such tests started in past two weeks.

Cole Creek: General Petroleum Corporation's 48-S-16 (State), SE SE SW 16-35n-77w, Cole Creek field, Natrona County, Wyoming, flowed 300 barrels initial through ½-inch choke on 2-inch tubing, proving Dakota sand for production. Dakota was topped at 7931 feet, and Lakota 7987 feet. Casing was set at 7984 feet and perforated at 7928-46 feet with 47 holes in Dakota. The discovery is ½ mile north and ⅛ mile east of General Petroleum Corporation's 55-21-G (Government), NW NW SE 21-35n-77w, completed in May, 1938, for 336 barrels, pumping, from Lakota at 8002-16 feet. The latter went to water and in 1940 was plugged back to Shannon sand at 4505-39 feet where it pumped 240 barrels initial. The Dakota discovery is ½ mile south of General Petroleum Corporation's State 1, NW NE SE 16-35n-77w, drilled in 1939 to 8707 feet in Sundance and abandoned. The new sand at Cole Creek will bring in approximately 320 proved acres and augments the light oil supply needed by Casper district refineries.

East Kevin: Northern Ordnance Corporation's State 1, CNE NE 36-35n-1e, Toole County, Montana, completed for 4,500,000 cubic feet of gas daily under 720 pounds rock pressure from Ellis-Madison contact at 1972-91 feet, the latter being total depth. The company is rigging-up rotary for State 1-B, CSE NE 31-35n-2e, 5 miles west of this discovery.

Northern Ordnance's Morris 1, CSW SW 15-9n-26e, Gage Dome, Musshell County, Montana, which indicated a producer two weeks ago, recovering 720 feet of oil and 120 feet of mud on drill-stem test in 1 hour from 5980-6060 feet in lime section of Amsden, is drilling at 6179 feet but reports no further shows.

Tensleep Tests: Fred Goodstein and associates are rigging up rotary for Mountain States 3, CSW SW 11-46n-99w, to drill the untested Tensleep zone in the Little Grass Creek structure, Hot Springs County, northern Wyoming. Little Grass Creek is separated from the Grass Creek field proper by a sharp syncline, and has 500 feet independent closure from the main structure. While Grass Creek has been proved for Tensleep production, no test of this sand has been made at Little Grass Creek. The structure, however, was proved for gas in 1917 by a well drilled in NW SW 11-46n-99w, which made gas from the Frontier at 2562-2901 feet. The well was shut-in until 1925 when it was opened up to supply the town of Thermopolis. One other gas well has been drilled at Little Grass Creek. The field

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CONDENSED STATEMENT OF CONDITION

JUNE 30, 1943

RESOURCES

Loans and Discounts		$ 39,110,211.46
Bankers' Acceptances and Commodity Loans		8,872,337.41
Banking House		1,903,000.00
Other Real Estate		106,266.27
Furniture and Fixtures		276,546.49
Stock in Federal Reserve Bank		300,000.00
U. S. Government Securities		66,907,421.91
State, Municipal and Other Securities		2,110,225.31
Cash in Vault and with Banks		49,832,492.80
Total		$169,418,501.65

LIABILITIES

Capital	$ 5,000,000.00	
Surplus	5,000,000.00	
Undivided Profits	901,599.18	$ 10,901,599.18
Reserve for Dividends, Payable July 1, 1943		100,000.00
Reserve for Taxes, Etc.		830,362.38
DEPOSITS:		
Individual	$91,082,395.34	
Banks	53,820,399.27	
U. S. Government	12,683,745.48	157,586,540.09
Total		$169,418,501.65

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has an estimated 160 productive gas acres in the Frontier.

Fifteen miles southeast, on the Golden Eagle Dome, Hot Springs County, Minnelusa, Oil Corporation and Kerlyn Oil Company are rigging up rotary for Unit-1 1, CSW SW 12-45n-97w, test to the Tensleep. Golden Eagle was proved for gas in 1918 in the Mesa Verde formation in sands ranging from 2270 to 3000 feet. Gas reserve was considered depleted in 1937 and the field consequently abandoned.

The two new Tensleep deep tests brings to four the total underway in Big Horn Basin fields of northern Wyoming brought about as a result of the recent development of prolific production in the Tensleep at Elk Basin. Fred Goodstein has two Tensleep tests underway at Little Buffalo Basin.

California

New Pays, Extensions Impressive Reserve Addition

With credit due chiefly to new pays and extensions of existing fields rather than to new field discoveries, it now is a definite prospect that the 1943 addition to California reserves will be the greatest since 1939. In recent weeks there has been a succession of secondary discoveries that opened fresh reserves; and at least two of these can be credited with high potentialities.

Rated first in importance is the opening of a sizeable dome a half-mile offshore from Huntington Beach, Los Angeles Basin. Earliest completions have taken in unusually thick sand sections, with one reporting more than 1500 feet of perforations. The fifth well in this development, brought in last week, flowed at an initial rate of 107 barrels in 3 hours and subsequently gauged 275 barrels a day through ¼-inch choke. The 1658 feet of 6⅝-inch included 1535 feet of perforations.

Just before the unexpected richness of the Huntington Beach find became known the most promising pay extension of the year up to that time had been opened in the Fellows area, Sunset-Midway field, Kern County. This discovery, believed by some to be a half-mile extension northwestwards of the Republic pool, was followed by immediate outpost drilling. The first four wells of an extensive program are now nearing completion and they are expected to give a clue to the trend of the extension and some idea of its extent.

Ventura Avenue field, Ventura County, has a most interesting new pay discovery. Working over an old General Petroleum Corporation well, Barnard 4A, which normally was a 50-barrel pumper, brought in a big flow of oil, mud and gas. It was established that a new zone for the field had been tapped in the approximate interval 3200-3300 feet, yielding on initial test 450 barrels of 33.7-gravity oil and 850,000 cubic feet of gas. The area to be developed in exploitation of the new zone is not believed extensive.

The largest total of new discoveries in California in any year since 1939 was below 100,000,000 barrels. It is now believed that when revised year-end estimates are made on 1943 discoveries the aggregate for those already recorded may equal that figure. And with wildcatting in California again on the uptrend there are hopes for further additions in the more than four months of exploration yet to be completed.

Michigan

Goodwell Indicated To Be Small Area

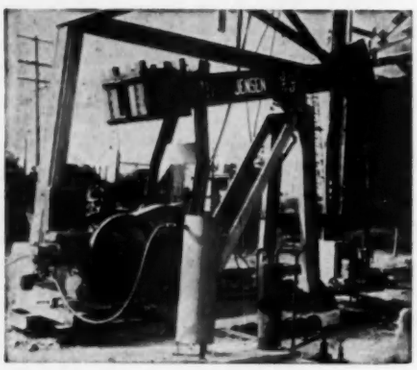
East and south offsets to the Goodwell field discovery, Newaygo County, completed in the 2700-foot Traverse horizon for commercial oil wells, the first completions since the discovery, but a third test, a diagonal southeast offset, was 17 feet low on the Traverse and will be deepened to test the Dundee. Structure information now available on the area indicates a comparatively small closure.

Cities Service Oil Company's Fetterle 1, E½ SW SW 9-14n-11w, diagonal southeast offset to the discovery, logged Traverse at 2777 feet, 17 feet lower than the initial well, and cored an unimpressive pay section at 2796 feet. This led to decision to deepen to Dundee, a horizon untested in the field.

Gladwin County: Sun Oil Company's Robinson 1, E½ SW SW 20-17n-2w, first follow-up test to a Dundee discovery drilled this spring, abandoned at 4009 feet after drilling Dundee dry. It is a southeast offset to the discovery.

Wexford County: A twist-off at 3165 feet delayed expected Dundee completion of Cherokee Oil Company's Wood 1, S½ SW NW 19-22n-9w, currently one of the closest watched outposts in northern Michigan. Test logged gas in both the Stray and Traverse sections.

Razor Sharp for Cutting Costs



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United States Well Completions

ARKANSAS

Columbia County — Haynesville Extension: E. C. Johnston's Sherman-Beene 1, se se 11-20s-20w, abnd 5290 ft.

Columbia County — Macedonia: G. H. Vaughn's Franks-Nipper Unit 1, c s½ nw 16-18s-21w, perf Cotton Valley 8000-06, flow 25 bbls, 1 hr, ¼-in, td 8940 ft.

Lafayette County—Midway: Barnsdall's Luzenia Creek 1, se nw 9-15s-24w, flow 7 bbls hr, ¼-in, td 6500 ft.

Pope County — Silex: Arkansas Louisiana Gas Co.'s Ladd-Strong 3, e½ sw ne 27-10n-21w, abnd 2979 ft.

Union County—Mt. Holly: Phillips' Umstead 1, se ne 15-17s-18w, elev 280, perf 7212-14, flow 130 bbls, ⅛-in, tp 950, gor 780-1, td 7300 ft.

Union County—New London: Marine Oil Co.'s Frost 10, nw nw 18-18s-11w, flow 140 bbls, ¼-in, td 5795 ft.

ARKANSAS WILDCATS

Ashley County: Union Producing Co.'s Crossett B-1, c s½ ne 2-19s-7w, abnd 6459 ft.

Calhoun County: Skelly's Calion 2, 34-15s-14w, abnd 3510 ft.

CALIFORNIA

Fresno County—Coalinga, old field: Shell's 127-29, ne sw sw 29-19-15, pump 106 bbls oil, 20 water, perf 1994-1957, 1935-1854, 1836-1788 ft, td 2053 ft, pd 1995 ft.

Shell's 124-2, se ne nw 2-20-15, pump 150 bbls water, 3093 ft, td 3270 ft.

Standard's 47-11A, se nw sw 11-19-15, pump, no est, perf 1531-1561, 1584-1626 ft, td 1777 ft, pd 1630 ft.

Texas Co.'s C-20, ne nw se 12-20-14, pump 25 bbls 12.8-gr oil, 7 water, 263 ft, perf 1174 ft, td 1175 ft.

Texas Co.'s A-3, se ne se 6-20-15, pump 18 bbls 12.8-gr oil, 9 water, 65 ft perf 1370 ft, td 1433 ft, pd 1378 ft.

Tide Water Associated's Pantheon 66, ne ne nw 32-19-15, pump 206 bbls 18-gr, perf 2412-2351, 2324-2293 ft, td 2414 ft.

Fresno County—Kettleman North Dome: (Old well deepened) Standard's 76-1P, 990 ft w e¼c 1-22-17, flow 1549 bbls, 174 ft perf 9183 ft, otd 8475 ft, deepened to 9185 ft.

Kern County—Belridge, South: Belridge Oil Co.'s 25A-34, ne nw sw 34-28-21, pump 15 bbls, perf 366-586, 606-647, 686-708 ft, td 2100 ft, pd 721 ft.

Belridge Oil Co.'s 18-35, sw sw sw 35-28-21, pump 40 bbls, perf 624-714, 901-963, 1043-1125 ft, oil sand 622 ft, td 1125 ft.

Chanslor Canfield Midway Oil Co.'s B. F. 11-9, ne nw sw 11-29-21, pump 25 bbls 14-gr oil, 7 water, perf 1020-1032, 1060-1080, 1162-1200, 1235-1245 ft, td 1375 ft, pd 1290 ft.

General Petroleum Corp.'s Belridge 46-12, ne sw nw 12-29-21, pump 40 bbls 14-gr, 84 ft perf 1029 ft td 1110 ft, pd 1020 ft.

Shell's FKL 52-12, se se sw 12-29-21, pump 84 bbls, perf 1127-1093, 1028-983 ft, td 1130 ft.

Kern County—Kern Front: National Oil Co.'s 11-14, sw ne sw 11-28-27, pump 30 bbls, 14-gr oil, 14 water, 86 ft perf 1935 ft, td 1935 ft.

Standard's 54, se sw sw 15-28-27, pump 53 bbls oil, 7 water, 145 ft perf 2431 ft, td 2438 ft.

Kern County—Midway-Sunset: H & T Co.'s 13, sw nw nw 15-31-22, pump 30 bbls, 175 ft, perf 1015 ft, td 1115 ft, pd 1015 ft.

Richfield Oil Corp.'s Fairfield 14, sw se ne 11-31-22, pump 19 bbls 16.7-gr, perf 1249-1284 ft, oil sand 1260 ft, td 2910 ft.

Standard's 22-20D, se nw nw 20-32-24, pump 40 bbls 25.2-gr. perf 3075-3116, 3154-3196 ft, td 3209 ft.

T. W. Travers' 4, ne ne ne 20-11-23, abnd 148 ft.

Kern County—Mount Poso: Ring Oil Co.'s Shapiro 7, nw ne nw 32-26-28, pump 74 bbls 15.6-gr oil, 18 water, 25 ft perf 1725 ft, td 1725 ft.

Ring Oil Co's Bowles 29-29, sw se sw 29-26-28, pump 75 bbls 15.7-gr, 25 ft perf 1770 ft, td 1770 ft.

Kern County—Strand: Tide Water Associated's KCL E-4-7, sw sw nw, flow 1145 bbls 34.2-gr Oil, 360,000 gas 5/16 in, 550/0, 42 ft perf 8488 ft, td 8490 ft.

Kings County—Kettleman North Dome: Standard's 6-27Q, se nw sw 27-22-18, flow 344 bbls, perf 7735-7665, 7630-7575, 7390-7298, 7270-7120 ft, td 7738 ft.

Los Angeles County—Montebello: Standard's Balwin 100, sw se sw 36-1-12, abnd 2860 ft.

Los Angeles County—Richfield: Standard's Anaheim Union Water Co. 2-1, fr nec Locke ppty 247 ft swly along s/l lease thence 335 ft nwly at r/a, 34-3-9, flow 192 bbls 15.9-gr oil, 55 water, 120,000 gas, 16/64-in, 100/720 lbs, 168 ft perf 3589 ft, td 3683 ft, pd 3590 ft.

Los Angeles County—Torrance: C. H. Le Bow and George A. McNee's Dominguez 2-1, 2930 ely along Huntington Blvd fr swc lease thence 330 ft nly at r/a, 4-4-14, pump 70 bbls 15.5-gr, perf 3330-3390, 3545-3686 ft, td 3696 ft.

Texas Co.'s Oakley 12, 1500 ely along c/l Lomita Blvd fr c/l Dodge Ave thence 260 ft sly at r/a, 30-4-13, pump 88 bbls oil, 12 water, 114 ft perf 3687 ft, td 3687 ft.

Los Angeles County—Wilmington: O. M. Slosson's Wing 1, 248 ft s 140 ft e c/l "M" and Ronan Sts, 32-4-13, pump 160 lbs 17-gr oil, 14 water, perf 3066-3009, 3487-3719 ft, td 3720 ft.

Orange County—Huntington Beach: Hobson-Morse-Woolsey's Gentry Comm. 1, 582 ft s 280 ft w c/l Ellis and Huntington Beach Blvd, pump 35 bbls 19-gr, perf 4250-4276 ft, td 4276 ft.

Southwest Exploration Co.'s State J-12, 1953 ft wly along c/l Ocean Ave proj fr c/l 23rd St thence 123 ft nly at r/a, flow 275 bbls 18-gr, 16/64-in, 1535 ft perf 4465 ft, td 4500 ft.

Standard's Huntington A-49, 2330 ft nwly along c/l Wesley Ave fr c/l 23rd St thence 330 ft nely at r/a, pump 120 bbls 15.9-gr, 465 ft perf 3583 ft, td 3585 ft.

CALIFORNIA WILDCATS

Kern County—Failure: Harp & Brown's Olcese 1, se nw ne 17-28-29, Round Mountain area, Vedder 1921 ft, abnd 1957 ft.

Los Angeles County—Failure: Continental's Baldwin 1, nw se sw 3-2-11, Montebello area, abnd 5879 ft.

Tehama County—Failure: Texas Co.'s Walbridge 1-A, sw ne ne 32-28-2, Tuscan Springs area, abnd 1498 ft.

Ventura County—Failure: Shell's Tomson 1, se nw sw 8-3-24, Miley zone 5290 ft, abnd 9704 ft.

COLORADO

Rio Blanco County — Rangely: Allen & Doyle's Rector 1, Lot 6, 35-2n-1w, abnd 1300 ft.

COLORADO WILDCATS

Las Animas County—Failure: Barney Oil Corp.'s Dutto-Marchiso 1, se se nw 32-33s-62w, abnd 1620 ft.

Moffat County—Failure: Maybell Co.'s Gov't 1, nw ne nw 12-5n-96w, abnd in Mesa Verde, 1200 ft.

FLORIDA

Osceola County: Hunt Oil Co.'s Consolidated Naval Stores 2, sw sw 15-27s-33e, dk.

ILLINOIS

Clay County: Shulman Bros.' Colclasure B-2, nw se ne 10-3n-7e, abnd 2355 ft.

Pure's Taylor 1, se se ne 29-3n-8e, Aux V sd 2925-38 and 2946-67 ft, Rosi 2978-85 ft, 94 bbls, 3155 ft.

Gulf's Franklin 4, nw nw nw 36-4n-7e, Tar Spgs 2307-27 ft, 31 bbls, 2327 ft.

Leland Waggoner's General American 1, sw ne 13-5n-5e, abnd 2534 ft.

H. Luttrell et al's Reed 13, c sw nw 14-5n-5e, abnd 2475 ft.

Texas Co.'s Byers 2, sw se nw 14-5n-5e, Aux V 2343-60 ft, 128 bbls, 2360 ft.

Edwards County: Joe Bander et al's Bradham 1, se se 3-1n-14w, abnd 2953 ft.

Franklin County: E. S. Adkins' Boner 4, sw ne se 25-7s-2e, abnd 2186 ft.

Smokey Oil Co.'s Horn-Diamond 2, se nw ne 25-7s-2e, L O'Hara 2779-84 ft, 33 bbls, 2931 ft.

Gallatin County: Gulf's Bahl 6, se sw sw 15-8s-9e, Tar Spgs 2179-92 ft, Cyp 2490-2502 ft, 28 bbls, 2502 ft.

Hamilton County: Texas Co.'s Johnson 3, se sw se 22-6s-6e, abnd 3280 ft.

Lawrence County: George Engle's Ridgley 1, nw sw nw 12-2n-12w, Biehl 1218-33 ft, 75 bbls, 1233 ft.

Madison County: Oberling & Bryant's Gross 2, sw sw ne 34-3n-6w, abnd 2325 ft.

Richland County: W. W. Shaffer et al's Cunningham 1, se ne sw 23-5n-10e, abnd 2965 ft.

Wabash County: S. W. Petrie's Trimble 2-B, ne sw se 35-2n-12w, Benoist 1971-77 ft, 40 bbls, 1988 ft.

Washington County: H. Luttrell et al's Hoelscher 1-A, sw se nw 10-1s-1w, Cyp 1375-82 ft, 45 bbls, 1382 ft.

Wayne County: Pure's Barnard 1, ne se se 7-1s-6e, abnd 3235 ft.

Pure's Peddicord 1, sw sw 9-1s-6e, McCl lm 3158-61 ft, 242 bbls, 3220 ft.

Swan-King Oil Co.'s Spencer 4, c e½ se ne 28-1n-6e, Aux V 3044-72 ft, 15 bbls, 3072 ft.

Kewanee's Beck 2, ne nw 29-1s-7e, McCl lm 3264-68 ft, 80 bbls, 3273 ft.

Deep Rock's Heidinger-Vogel 1, sw nw 13-2s-6e, L O'Hara 3265-71 ft, 250 bbls, 3320 ft.

White County: Superior's Ford C-16, ne se se 27-4s-14w, Walt 2122-29 ft, Cyp 2579-87 ft, Aux V 2808-31 ft, 126 bbls, 2831 ft.

Carter's Myers 1, nw sw ne 19-6s-9e, Cyp

Wells Completed in the United States in Week Ended August 21, 1943

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama	....	....	....	....	....	....	....	....	....	....	....	....	2	3
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Arkansas	4	....	....	2	6	....	....	....	2	2	8	6	141	141
California	27	....	....	2	29	1	....	....	4	4	34	33	994	478
Colorado	....	....	....	1	1	....	....	....	2	2	3	....	21	8
Florida	....	....	....	....	....	....	....	....	....	....	....	1	1	....
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	1	2
Illinois	14	....	....	9	23	....	3	....	8	11	34	43	1,111	1,299
Indiana	2	....	....	....	2	....	....	....	2	2	4	4	160	254
Kansas	14	....	....	11	25	....	1	....	6	7	32	37	1,069	1,061
Kentucky	4	....	....	4	8	....	....	....	1	1	9	11	219	93
Louisiana	5	2	....	2	9	....	1	....	....	1	10	19	416	647
North Louisiana	3	2	....	....	5	....	....	....	....	....	5	13	190	....
South Louisiana	2	....	....	2	4	....	1	....	....	1	5	6	226	....
Michigan	4	3	....	2	9	1	1	....	2	3	13	15	348	442
Mississippi	....	....	....	....	....	....	....	....	....	....	....	2	34	74
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	15	17
Montana	6	....	....	2	8	....	....	1	....	1	9	3	156	132
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	....	27
New Mexico	....	....	....	....	....	....	....	....	2	2	2	3	152	269
New York	12	....	12	....	24	....	....	....	....	....	24	24	764	790
Ohio	4	11	....	11	26	....	....	....	....	....	26	13	571	704
Oklahoma	14	1	4	9	28	2	4	....	2	6	36	28	848	951
Pennsylvania	32	9	17	1	59	....	....	....	....	....	59	54	1,753	2,615
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	5	7
Texas	48	3	1	10	62	4	5	....	26	31	97	110	2,615	3,843
E. T. Bor. Co.'s	....	....	....	....	....	....	....	....	....	....	....	....	15	....
East Texas Field	....	....	....	....	....	....	....	....	....	....	....	....	5	....
Rest of E. Texas	4	....	....	1	5	....	....	....	2	2	7	8	147	....
North Texas	8	....	1	2	11	....	1	....	6	7	18	35	634	....
W. Central Texas	4	1	....	1	6	....	....	....	7	7	13	11	240	....
West Texas	15	....	....	3	18	4	....	....	....	....	22	18	566	....
Texas Panhandle	3	....	....	1	4	....	....	....	....	....	4	3	131	....
G. Coast, Upper	6	1	....	1	8	....	....	....	3	3	11	7	207	....
G. Coast, Lower	6	....	....	....	6	....	2	....	1	3	9	20	389	....
Southwest Texas	2	1	....	1	4	....	2	....	5	7	11	8	243	....
S. Central Texas	....	....	....	....	....	....	....	....	2	2	2	....	38	....
West Virginia	2	16	....	1	19	....	....	....	....	....	19	9	394	478
Wyoming	4	1	....	3	8	....	....	....	....	....	8	1	85	56
Total U. S.	196	46	34	70	346	8	15	1	57	73	427	416	11,875	14,393

* Includes distillate wells. † Includes salt water disposal wells.

2677-90 ft. Benoist 2810-26 ft, 154 bbls, 2969 ft.

ILLINOIS WILDCATS

Clay County—Failure: Nat'l Assoc. Pet.'s Kincade 1, nw ne se 17-5n-6e, abnd 2773 ft.

Cumberland County—Failure: Sohio's Moses 1, ne ne sw 28-10n-9e, abnd 2680 ft.

Effingham County—Failure: Tide Water's Danks 1, ne nw sw 29-6n-5e, abnd 2602 ft.

Fayette County—Failure: J. L. Smith's Bradley 1, se se sw 17-6n-1e, abnd 1130 ft.

Jefferson County—Oil Discovery: Magnolia's Newell Badett Unit 1, sw ne ne 18-3s-3e, Aux V 2684-93 ft, 60 bbls, 2693 ft.

Jefferson County—Failure: J. A. Barbre et al's Monroe 1, ne ne nw 36-4s-4e, abnd 3441 ft.

Perry County—Failure: Texas Co.'s Eiffert 1, nw se nw 31-4s-1w, abnd 1595 ft.

Richland County—Failure: S. C. Yingling et al's Richey 1, ne ne se 10-2n-10e, abnd 3370 ft.

Shelby County—Failure: Siemaker & Buell's Workman 1, nw se 6-10n-4e, abnd 1959 ft.

Wabash County — Oil Discovery: Shell's Thrapp 1, sw sw nw 29-1n-12w, Rosi 2326-36 ft, McCl 2358-62 ft, 207 bbls, 2411 ft.

Wayne County—Discovery: Buren & McGregor's Fee 1, nw se 32-1s-7e, McCl lm 3274-81 ft, 50 bbls, 3281 ft.

INDIANA

Gibson County: Continental's Bozeman Land Co. 62, se ne sw 23-3s-14w, Aux V 2760-91 ft, 21 bbls, 2791 ft.

Pike County: Chester Oil Co.'s Hunt 1, se se sw 16-1s-9w, Hardinsburg 1293-1305 ft, 20 bbls, 1305 ft.

INDIANA WILDCATS

Clay County—Failure: H. C. Dietrich's Duncan 1, se ne se 27-9n-6w, abnd 1734 ft.

Posey County—Failure: Sun's Welborn 1, nw sw se 12-7s-12w, abnd 1900 ft.

KANSAS

Barton County—Kraft-Prusa: Cities Service's Hogan A-8, ne se ne 11-17s-11w, Arb 3405 ft, abnd 3435 ft.

Barton County—Silica: Derby's Dannebohm 1, c nw ne 20-20s-11w, Arb 3340 ft, 1500 gals acid, shot 5 qts, abnd 3350 ft.

Butler County—Eldorado: Texas Co.'s Robinson 25, se se nw 17-25s-5e, Miss prod, pump 127 bbls, 2608 ft.

Cowley County—Rock: Stelbar Oil Co.'s Joslin A-3, s/2 sw ne 21-30s-4e, Bartels 2802 ft, shot 60 qts, pump 200 bbls, 2828 ft.

Ellsworth County—Stoltenberg area: Branine & Goring's Phillips 1, c nw sw 24-16s-10w, Arb 3250 ft, pump 86 bbls, 3269 ft.

Ellsworth County—Bloomer: H. B. Elwell's Jansen 1, c nw sw 29-17s-10w, Arb 3253 ft, abnd 3285 ft.

Marion County—Lost Springs: Ring Mac's Winter 1, c e½ nw se 5-18s-4e, Miss 2402 ft, pump 12 bbls oil, 90 bbls wtr, abnd 2447 ft.

McPherson County—Henne: Adair & Morton's Platt 1, c ne ne 20-17s-1w, Miss 2646 ft, abnd 2660 ft.

McPherson County—Lindsborg: Carter's Johnson 1, c w½ ne se 13-17s-4w, Viola 3411 ft, 3000 gals acid, pump 259 bbls, 3421 ft.

Pratt County—N. Iuka: British American's Petrowsky 2, sw sw ne 20-26s-12w, Arb 4284 ft, 2000 gals acid, flow 143 bbls in 6 hrs, 4313 ft.

Magnolia's Ringer 6, sw sw ne 21-26s-12w, Arb 4289 ft, 2000 gals acid, flow 19 bbls per hour, 4311 ft.

Skelly's Honeman 1, sw sw nw 31-26s-12w, Arb 4302 ft, 1500 gals acid, flow 3000 bbls, 4321 ft.

Hollow Drilling Co.'s Harrell 1, sw nw ne 36-26s-13w, Arb 4325 ft, 100 gals acid, pump 74 bbls, 4346 ft.

Pratt County—Carmi: Shell's Petrowsky 1-B, sw ne se 30-26s-12w, Arb 4287 ft, 1500 gals acid, flow 3000 bbls, 4314 ft.

Rooks County—Barry: Continental's Barry A-2, ne sw se 2-9s-19w, Arb 3433 ft, swab 60 bbls hr, 3451 ft.

Russell County—Gorham: Eldorado Refining Co.'s Mills 1, e½ se ne 34-13s-15w, Arb 3364 ft, abnd 3395 ft.

Russell County—Krug: Gulf's Anschultz 1, c sw ne 8-14s-14w, show 3331 ft, abnd 3335 ft.

Russell County—Neidenthal: National's Reinhardt 2, se ne sw 19-14s-14w, Lans 3001 ft, 5000 gals acid, pump 164 bbls, 3244 ft.

Russell County—Trapp: Coralena's Sellens 4, sw ne nw 19-15s-13w, Arb 3271 ft, pump 170 bbls, 3293 ft.

Stafford County—Sittner: Stanolind's Grow 1, s½ sw nw 28-31s-12w, Arb 3733 ft, abnd 3741 ft.

Stafford County—Rothgarn: Faulkner's Rothgarn B-1, e½ se se 10-21s-13w, Simps 3697 ft, abnd 3760 ft.

Stafford County—Hazel: Faulkner's Sipes B-1, e½ nw se 21-21s-13w, Arb 3681 ft, 4000 gals acid, pump 417 bbls, 3693 ft.

Stafford County—Spangenburg: Stanolind's Van Gaider 1, c n½ nw sw 22-22s-12w, Arb 3695 ft, abnd 3699 ft.

Stafford County—Leesburgh: G. K. Harris' Mather 1, se sw se 1-25s-13w, Arb 4166 ft, abnd 4200 ft.

Continental et al's McCune 3, nw se ne 12-25s-13w, Arb 4087 ft, swab 280 bbls in 8 hrs, 4094 ft.

KANSAS WILDCATS

Barton County—Failure: M. M. Price's Johanson 1, c sw se 5-16s-11w, Cong 3308 ft, abnd 3397 ft.

Barton County—Oil Discovery: Ingling & Parker and Ed Jones' Ames 1, se sw se 22-18s-11w, lime 3313 ft, 3500 gals acid, pump 287 bbls.

Jackson County—Failure: C. W. Murchinson's Federal Land Bank 1, sec 28-10s-15e, Arb 2865 'ft, abnd 2885 ft.

Kingman County—Failure: Stanolind's Sample 1, sec nw 2-29s-8w, abnd 4709 ft.

Norton County—Failure: Phillips' Irma 1, nec se 30-5s-21w, lime 3738 ft, abnd 3786 ft.

Pratt County—Failure: Hollow and National's Huffman 1, c nw se 17-26s-12w, Arb 4393 ft, abnd 4413 ft.

Rooks County—Failure: National Associated Petroleum Co.'s Hansen 1, nwc 15-6s-20w, abnd 3688 ft.

KENTUCKY

Daviess County: Miller & Schiarella's Miller 1, 11-N-27, Bethel 1792-1815 ft, 100 bbls, 1851 ft.

Farmer & Sayder's Howerd 2, 16-N-30, abnd 1274 ft.

Henderson County: Sinclair Prairie's Bradley 3, 3-N-23, Tar Spgs 1950-68 ft, 160 bbls, 1968 ft.

Kingwood's James 1, 17-P-25, abnd 2600 ft.

Gulf's Moorehead 5, 23-Q-21, Cypr sd 2290-2312 ft, 500 bbls, 2312 ft.

Sun's Moore 1, 23-Q-21, abnd 2724 ft.

Union County: H. H. Weinert's Clements 1, 12-O-20, McCl lm 2586-96 ft, 231 bbls, 2610 ft.

Sun's Drewery 1, 20-O-18, abnd 2114½ ft.

KENTUCKY WILDCAT

Edmonson County—Failure: Batten et al's Finn 1, 23-H-48, abnd 1000 ft.

NORTH LOUISIANA

Caddo Parish—Caddo-Pine Island: Lewis & Bauman's Vaughn 4, 7-21n-14w, oil, no gauge, td 1680 ft.

Conway Oil Co.'s Muslow A-2, 5-20n-15w, oil, no gauge, td 1510 ft.

Concordia Parish—Lake St. John: Carter-California's State Lease 476-3, 15-9n-10e, perf 4615-37 ft, flow 127 bbls. ¼-in, tp 510, td 4644 ft.

Union Parish — Monroe: Union Producing Co.'s Grayling 13, nw 32-22n-4e, 960,000 gas, rp 890 lbs, td 2200 ft.

Union Producing Co.'s Crossett 60, 57-21n-5e, 2,736,000 ft gas, rp 540 lbs, td 2255 ft.

SOUTH LOUISIANA

Beauregard Parish—Baer: Phillips' First National Bank 3, n 73 deg 10 mins, w 2220 ft fr se cor sec 22, in sec 23-6s-9w, abnd 6560 ft.

Iberia Parish — Avery Island: Humble's Petit Anse 5, 3150 ft n, 154 ft e of sw c 25-13s-5e, 5½-in 8985 ft, perf 8960-8 ft, flow 310 bbls, 10/64-in, td 8771 ft.

LaFourche Parish—Chacahoula: Sun's Mire 1, 1205 ft e, 330 ft n of sw c nw¼ 69-15s-15e, east flank, perf 8648-58 ft, flow 320 bbls dist, 12/64-in, td 9240 ft.

Terrebonne Parish—Lake DeCade: Superior's LaTerre Land 4, 9900 ft n 00 deg 47 mins w, 9907 ft n 89 deg 12 mins e fr sec 32 in 27-19s-15e, abnd 12,803 ft.

SOUTH LOUISIANA NEW PAY

Iberville Parish—St. Gabriel: George Echols' Natalbany 1-J, s 89 deg 30 mins w 1859 ft & n 00 deg 30 mins w 667 ft fr sec 12-9s-1e, 5½-in 9708 ft, perf 9700-04 ft, flow 37 bbls dist, ¼-in, td 10,515 ft.

MICHIGAN

Bay County—Kawkawlin: Gulf's Goulet A-1, s½ ne nw 33-15n-4e, Dundee lime, flow 102 bbls, 2940 ft.

Bachelder & Gallaghers' Wilder 1, n½ nw se 12-14n-4e, Dundee lime, pump 20 bbls, 2927 ft.

Clare County—Cranberry Lake (formerly North Winterfield): Taggart Bros. Co.'s Miltner S 13, c se 1-20n-6w, Stray sand, ga 10,-640,000 gas, 1326 ft.

Gladwin County—West Beaverton: Sun's Robinson 1, e½ sw sw 20-17n-2w, Dundee lime, abnd 4009 ft.

Gladwin County—Bentley: Sun's Davis 2, se se sw 17-17n-2e, Dundee lime, swab 39 bbls, 3515 ft.

Montcalm County—Richland: E. C. Dailey's Palmer 2, sw nw ne 17-12n-5w, Stray sand, 330,000 gas, 1181 ft.

Newaygo County—Woodville: Ohio's Gas Unit 2, c nw 28-15n-11w, Stray sand, 2,640,000 gas, 1214 ft.

Newaygo County—Goodwell: Pure's Detroit Trust 1, e½ se se 8-14n-11w, Traverse lime, flow 428 bbls 16 hrs, 2742 ft.

Pure's Hull 1, e½ nw sw 9-14n-11w, Traverse 2768-81 ft, flow 143 bbls, td 2787 ft.

Ottawa County—South Zeeland: C. A. Perry's Nykamp 2, nw ne ne 31-5n-14w, Traverse lime, abnd 1485 ft.

MICHIGAN WELL DRILLED DEEPER

Clare County—Redding: Pure's Davis 2, w½ e½ ne 33-19n-6w, old td 3910 ft, abnd 5462 ft. (Produced in Dundee from 1939 to this year. A wildcat below its old producing depth of 3910 ft).

MICHIGAN WILDCATS

Cass County—Failure: Otto Lund's Flynn 4, se sw sw 14-5s-16w, abnd 816 ft.

Muskegon County—Failure: Muskegon Dev. Co.'s Ruper 1, c nw nw 2-12n-14w, Traverse 2039 ft, abnd 2750 ft.

Van Buren County—East Bangor Field Discovery: Harris Oil Co.'s Watkins 1, sw nw sw 14-2s-16w, elev. 695 ft, Traverse 1037 ft, after acid pump and flow 36 bbls oil, 41 bbls water, td 1038 ft.

MONTANA

Glacier County—Cut Bank: A. B. Cobb & Co.'s Tribal-202 3, se sw ne 24-32n-6w, swab 94 bbls, Lower Cut Bank 3060-73 ft, 7-in 3019 ft, td 3078 ft, elev 3730 ft.

Indian Oil Co.'s Winkler 3, se sw sw 23-35n-6w, swab 38 bbls, Lower Cut Bank 2856-65 ft, 7-in 2815 ft, td 2876 ft, elv 3875 ft.

Glacier Production Co.'s Miller 12, cel nw sw 33-33n-5w, swab 110 bbls, Lower Cut Bank 2967-88 ft, 7-in 2965 ft, td 2988 ft, elv 3859 ft.

Santa Rita Oil & Gas Co.'s Halverson 3, cse ne 23-34n-6w, swab 60 bbls, 7-in 2866 ft, td 2910 ft.

Santa Rita's Tribal 19, cne se 9-35n-6w, Upper Cut Bank 2950-3032 ft so & water, no Lower Cut Bank, abnd 3036 ft.

Toole County—Kevin-Sunburst: A. B. Cobb and Hardrock Oil Co.'s Gov't 2, ne se sw 18-35n-3w, pump 25 bbls, acid 500 gals, Ellis-Madison 2460-70 ft, td 2470 ft.

Coolidge & Coolidge's Waite 2-B, ne nw se 13-35n-2w, abnd 1654 ft.

Kalbar Oil Co.'s Fee 4, sw ne se 13-35n-2w, pump 240 bbls, Ellis-Madison 1561-68 ft, td 1561 ft.

MONTANA WILDCAT

Toole County—Gas Discovery: Northern Ordnance Corp.'s State 1, cne ne 36-35n-1e, East Kevin, 4.5 ft gas, 720 lbs rp, Ellis-Madison 1972-1991 ft, td 1991 ft.

NEW MEXICO WILDCATS

Lea County—Failures: Olen F. Featherstone et al's Keel 1, c nw se 33-18s-32e, elev 3691 ft, anhydrite 1200 ft, salt 1335-2610 ft, red sand 3872-3922 ft, abnd 4861 ft.

N. G. Penrose, Inc.'s State-Phillips 1, c se se 3-16s-33e, elev 4220 ft, anhydrite 1480 ft, salt 1610-2500 ft, Yates sand 2760 ft, red sand 3630 ft, Grayburg 4055 ft, abnd 5102 ft.

OKLAHOMA

Comanche County—Ft. Sill: Texas Co.'s Logan 1, se se nw 9-3n-10w, sand 1030 ft, 500,000 ft gas, 1382 ft.

Creek County—Deep Fork: Tibbens' Wilson 7, nw se se 18-14n-9e, Prue 2361 ft, shot 80 qts, swab 115 bbls, 2400 ft.

Creek County—Slick: Glen Cole et al's Sewell 1, c w½ sw se 27-16n-10e, Dutcher 2640 ft, pump 118 bbls, 2654 ft.

Creek County—Glenn: Gulf's Pitman 30, se sw se 7-17n-12e, Glenn 1414 ft, repressure well, 1567 ft.

Sinclair Prairie's Berryhill 54, c wl sw nw ne 7-17n-12e, Glenn 1369 ft, repressure well, 1532 ft.

Sinclair Prairie's Berryhill 55, se nw ne 16-17n-12e, Glenn 1392 ft, repressure well, 1561 ft.

Sinclair Prairie's Berryhill 57, c ne 16-17n-12e, Glenn 1400 ft, shot 140 qts, pump 6 bbls, 1555 ft.

Creek County—Manford district: Brady & Sons' Duncan B-4, ne sw ne 19-19n-9e, Red Fork 2424 ft, shot 50 qts, pump 20 bbls, 2552 ft.

Hughes County—S. Spaulding: Bradley Bros' Eckles 1, ne sw sw 21-6n-8e, Booch 2659 ft, shot 25 qts, abnd 2676 ft.

Hughes County—W. Holdenville: Crum & Bartlett's Fream 1-A, se ne nw 27-7n-8e, Cromwell 3289 ft, pump 60 bbls oil, 60 wtr, 2,500,000 gas, 3373 ft.

Hughes County—Horns Corner: Deep Rock's Price B-1, ne sw sw 21-7n-10e, 2nd Cromwell 3894 ft, flow 251 bbls oil, 90 wtr in 6 hrs, 3930 ft.

Kay County—Burbank: Phillips' Pappan 13, se sw ne 4-27n-5e, Burbank 2871 ft, repressure well, 2922 ft.

Kay County—Vernon: West Virginia O&G Co.'s Vaughn 1, c ne se 20-29n-1e, Miss chat 3370 ft, shot 40 qts, pump 67 bbls oil, 18 wtr, 3372 ft.

Lincoln County—N. McLoud: Phillips' School Land 1, c wl ne ne 16-12n-2e, Wx 5618 ft, pump 22 bbls oil, 15 wtr, 5621 ft.

Marshall County—Cumberland: Pure's Metz 105, se se ne 29-5s-7e, McLish 5622 ft, pump 132 bbls, 5995 ft.

Muskogee County—Doyle area: Home Gas Co.'s Fee 4, c e½ se 15-15n-15e, Booch 802-17 ft, abnd 817 ft.

Okfuskee County—Olympic area: Buell's Shults 1, se se nw 13-10n-8e, Gilcrease 300 ft, abnd 3680 ft.

Okfuskee County—Deaner area: Wood Oil Co.'s Winn 1-A, ne ne se 28-11n-11e, Wx 3835 ft, abnd 3840 ft.

Okfuskee County—Clearview area: McIntyre et al's Thompson 1, c ne sw 32-11n-11e, Wx 3890 ft, abnd 3895 ft.

Okfuskee County—N. Baltimore: Wright & Conkel's Sugar 1, sw sw ne 13-12n-11e, sand 820 ft, shot 25 qts, pump 5 bbls, 855 ft.

Okmulgee County—Morris area: B. H. Young's Anderson 1, ne ne sw 35-13n-13e, sand 2131 ft, abnd 2141 ft.

Pawnee County—New Cushing: Olson et al's Thompson 1, nw se nw 35-18n-5e, 2nd Wx 3949 ft, abnd 3975 ft.

Pawnee County—Masham: E. B. Shawver's Zoldoske 1, c n½ ne se 22-23n-4e, Miss 3727 ft, abnd 3730 ft.

Pottawatomie County—St. Louis: Clark's Green 1, sw se nw 15-7n-4e, Wx 4428 ft, abnd 4450 ft.

Pottawatomie County — Centerpoint: Berkey's Brundage 1, ne ne ne 12-9n-2e, Dolo 5640 ft, 1000 gals acid, pump 36 bbls oil, 350 wtr, 5685 ft.

Stephens County—West Loco: Jackson Bros.' Dilley-Schram 1, ne nw ne 7-3s-5w, sandy lime 1043 ft, flow 50 bbls, 1118 ft.

Tillman County—Tipton: A. D. Britton's Banks 1, ne ne nw 8-1s-19w, granite wash 2688 ft, pump 14 bbls oil, 16 wtr, 2724 ft.

Tulsa County—Owasso: Continental's Keys 7, c n½ ne nw 9-21n-13e, Tucker 1283 ft, shot 50 qts, pump 20 bbls, 1311 ft.

OKLAHOMA WELLS DEEPENED

Kay County—Vernon: Hershey's Gross 1, se sw ne 17-29n-1e, otd 3390 ft, pay 3409 ft, shot 35 qts, pump 6 bbls, 3423 ft.

Pottawatomie County—Hotulke: Mude Oil Co.'s Bowling 3, c ne nw 25-9n-4e, otd 4370 ft, dolo 4380 ft, 3000 gals acid, pump 20 bbls oil, 10 wtr, 4412 ft.

OKLAHOMA WILDCATS

Cotton County—Oil Discovery: Ruggles' Sanders 1, nw nw se 31-1s-9w, sand 2305-25 ft, pump 12 bbls, 2325 ft.

Grant County—Failure: Barnsdall's Bolderston 1, ne sw se 24-28n-3w, Wx 4802 ft, abnd 4821 ft.

Hughes County—Oil Discovery: Crum & Bartlett's Fream 1, ne se nw 27-7n-8e, Gilcrease 3082-95 ft, pump 50 bbls oil, 60 wtr, 3311 ft.

Logan County—Distillate Discovery: Eason Oil Co.'s School Land 1, ne sw sw 16-15n-2w, sandy dolomite 5990-6005 ft, 100 bbls distillate, 4,500,000 gas, 6046 ft.

Logan County—Failure: W. H. Elson's Woods 1, se se ne 28-17n-1e, 2nd Wx 5116 ft, abnd 5127 ft.

McIntosh County—Gas Discovery: Pine et al's Dodd 1, se se se 26-11n-15e, shot 100 qts 1737-47 ft, 789,000 gas, 3541 ft.

EAST TEXAS

Freestone County — Steward Mill: Carter-Gragg Oil Co.'s Steward Bros. 1, 2250 ft ewl and 3250 ft nsl James James sur, elev 371 ft, Pecan 2366-2490 ft, Austin 3290-3645 ft, Woodbine 4004 ft, abnd 4094 ft.

Wood County—Manziel: Amerada's Rogers 1, 638 ft ewl and 660 ft nsl 50.8-ac lse, John Polk sur, elev 482 ft, Georgetown 5120 ft, Fort Worth lime 5680 ft, Goodland 6187 ft, Paluxy series 6260 ft, sand 6301-06; 6323-29 and 6334-42 ft, pump 88 bbls 32-gr. perf 6300-42 ft, td 6441 ft.

Wood County—Quitman: Delta Dr Co. et al's Green 1, 467 ft nsl and 517 ft wel S. Calderon sur, elev 433 ft, Georgetown 5079 ft, Paluxy sand 6286-6306 ft, flow 820 bbls, ¼-in, perf 6280-6310 ft, td 6388 ft.

Roger Lacy et al's Cox 1, 467 ft out nec 40-ac lse, Jas. Barfield sur, 4500 ft w by s production, elev 415 ft, top Georgetown 5132 ft, Goodland 6136-98 ft, Paluxy series 6214 ft, sand 6255-6303 ft, flow 605 bbls, ¼-in, perf 6260-6300 ft, td 6342 ft.

Roger Lacy et al's Rape-Turner 1, 467 ft nsl and 561 ft, from e and w lines 80-ac lse, H. Anderson sur, A9, elev 466 ft, top Georgetown 5063 ft, Goodland 6214-84, Paluxy 6296-6336 ft, flow 781 bbls, ¼-in, perf 6296-6336 ft, td 6392 ft. (3660 ft ne of production).

EAST TEXAS WILDCATS

Houston County—Failure: Continental's Fiddell 1, 1600 ft from nw and 7080 ft from ne lines M. J. Chamar sur, slim-hole test, elev 263 ft, abnd in Midway 4973 ft.

Upshur County—Failure: J. R. Meeker et al's Henton 1, 490 ft from ne and 889 ft from se lines 75-ac tr, Robertson Asher sur, elev 356 ft, Pecan 2615 ft, Woodbine 3715 ft, Georgetown 3860 ft, Goodland 4966 ft, Paluxy 5009 ft, abnd 5302 ft.

NORTH TEXAS

Archer County—Cooper: Geo. W. Cooper's Daume 1, 330 ft out nec lot 1, SPRy sur A422, KMA 4123 ft, Bend 4600 ft, Lower Bend 4813 ft, abnd 4980 ft.

Baylor County—Seymour: British-American's Tuberville 15, 1675 ft snl and 330 ft wel T&NO 198, pump 245 bbls oil, 5 water, acid 2000 gals Canyon 2518-20 ft.

Montague County—Hildreth: Continental's Clisbee 1, 1325 ft snl and 330 ft wel ETRy 57, Bend 6018 ft, Viola 6619 ft, Simpson 7223 ft, Ellenburger 7292 ft, flow 1044 bbls, 20/64-in, perf 6095-6105 ft, td 7413 ft.

Montague County—Mueller: Continental's Scheller 1, 330 ft from se and 390 ft from ne lines Hill CSL sec 96, Bend 6031 ft, Viola 6679 ft, Simpson 7165 ft, flow 1082 bbls, 25/64-in, perf 6045-50 ft, td 7270 ft.

Wichita County—K-M-A: G. E. Kadane & Sons' Bradley 4-A, M. L. Gahagan sur, pump 120 bbls, Strawn 3816-65 ft.

Wichita County: Bell O&G Co.'s Cropper 10-B, 1300 ft nsl and 1050 ft ewl C. Winters sur, pump 130 bbls, sand 1373-84 ft.

Texas Co.'s Waggoner Est. 438-A, 2722 ft e and 1903 ft s of swc GC&SF 19, but in TCRy 2, pump 40 bbls, sand 528-35 ft.

Young County: Belfort Oil Co.'s Holcomb 1-B, 467 ft nsl and 330 ft ewl T&NO 7, A1244, flow 70 bbls oil, 3 water, 2-in, shot 30 qts 3825-43 ft.

Young County—Padgitt: R. C. Lipscomb et al's Scott-Shell 1, 330 ft out swc TE&L 335, Bend 4330 ft, Mississippi 4666 ft, flow 1150 bbls, ¾-in, acid 750 gals 4666-4762 ft.

Young County—Williamson: Elmer J. Boeseke Jr.'s Craig 2, 1400 ft snl and 1457 ft ewl TE&L 300, abnd 5009 ft.

NORTH TEXAS GAS REPRESSURE WELL

Wilbarger County: W. T. Waggoner Estate's Fee 13-CC, Geo. Butler sur, A3, sand 1100-1105 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: Fortex Oil Corp.'s Colgan 1, 330 ft out sec TE&L 2470, abnd 1554 ft.

E. C. Norwood et al's Kinder, 660 ft out nwc sec 59, blk 5, Clark-Plumb sur, Bend 5124 ft, Mississippi 5760 ft, abnd 5811 ft.

Louis Sikes et al's Seay 1-A, 300 ft out nec blk 63, J. W. Harris subdiv, abnd 1415 ft.

Clay County—Failure: Continental's Hilburn 1, 1240 ft snl and 779 ft wel 125-ac tr, E. W. East sur, A133, Mississippi 6190 ft, Ellenburger 6200 ft, abnd 6470 ft.

Jack County—Failure: Joe A. Worsham et al's Cherryholmes 1, 2310 ft n and 2310 ft w of sec MEP&P sur, A240, but in MEP&P sur A423, abnd 5252 ft.

Montague County—Failure: R. H. Dearing & Sons' Fields 1, 660 ft out north corner sec 24, J. Fields sur, A1083, Palo Pinto 1880 ft, Marble Falls 7420 ft, abnd 8002 ft.

Wichita County—Airport Field New Pay: Consolidated Oil Co's Davidson 1, 495 ft snl and 1815 ft wel of west 640 ac of J. R. McDowell sur, A282, KMA lime 4242 ft, Bend 5222 ft, Mississippi 5325 ft, Ellenburger 5350 ft, flow 1224 bbls, ¾-in, 5350-64 ft.

LOWER TEXAS COAST

Jackson County—Maurbro: Humble's Pritchett 3, 467 ft fr wl, 2607 ft fr nl 300-ac lse, Abraham Clare sur, A 12, 5½-in 5217 ft, perf 5210-13 ft, flow 461 bbls, ¼-in, td 5217 ft.

Jackson County—West Mauritz: Seaport Oil Co.'s Mauritz 1, 1300 ft fr el, 467 ft fr nl Morris-Cummings sur 21, A 238, 5½-in 5565 ft, perf 5491-94 ft, flow 125 bbls oil and water, reperf 5195-97 ft, abnd 5595 ft.

Jim Wells County—Seeligson: Magnolia's Seeligson 41, 7590 ft fr sl, 8910 ft fr el A. Ramirez gr, 7-in 6822 ft, perf 5186-5214 ft, flow 107 bbls, 11/64-in, td 6850 ft.

Magnolia's Seeligson 45, 10,230 ft fr sl, 7590

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Transwestern's Seeligson 5-B, 727 ft fr wl, 5393 ft fr sl 1318-ac lse, R. P. Haldeman subdvn Seeligson Ranch, 5½-in 6239 ft, perf 5909-13 ft, flow 104 bbls, 3/32-in, td 6250 ft.

Nueces County—Stratton: Edwin B. Cox and Jake L. Hamon's Noble 2, 467 ft fr wl, 1787 ft fr sl e½ e¼ 199, Bishop Palo Alto subdvn, Paso Ancho de Abajo gr, 5½-in 6563 ft, perf 6555-62 ft, flow 111 bbls, 7/64-in, td 6563 ft.

LOWER TEXAS COAST EXTENSION

Willacy County — Willamar: Baldridge & King's Cavazos 1, 467 ft fr n&wl's lot 3, share 12, San Juan de Carricitos gr, 5½-in 7929 ft, flow 394 bbls, ¼-in, td 7959 ft. Extends pay 9000 ft south.

LOWER TEXAS COAST NEW PAYS

Kleberg County—Stratton: Humble's King Ranch-Paso Ancho 26, 1980 ft nw alg nl Santa Gertrudis gr, A 102, fr se cor G. Phillip Wardner tr, 5-½-in 7153 ft, perf 6998-7008 ft, flow 208 bbls, ¼-in, td 7163 ft.

LOWER TEXAS COAST WILDCAT

Victoria County—Failure: Bridwell Oil Co.'s Whitney 1, 495 ft fr se&nel's 943-ac tr, Desidero Garcia gr, 1 mi s Dernal, abnd 4807 ft.

SOUTHWEST TEXAS

Live Oak County—Kittie: Continental's West 5, 450 ft ne Nueces River, 894-ac lse, TT RR 319, abnd 1448 ft.

Starr County—Lockhart: Lockhart & Davenport's Amaya 1, 330 ft fr n&wl's share 70, J. A. de la Garza Falcon porcion 80, 7-in 3685 ft, perf 3573-93 ft, 3,000,000 gas, ¼-in, td 3956 ft.

Lockhart & Davenport's Caffarelli 2, 1650 ft fr wl, 330 ft fr sl share 19-C, J. A. de la Garza Falcon porcion 80, 5½-in 3785 ft, perf 3590-3600 ft, flow 18 bbls, ¼-in, td 5508 ft.

Starr County—North Sun: Sun's Olivares 3, 495 ft fr wl, 467 ft fr nl 270-ac tr Santa Theresa gr, 5¾-in, 4543 ft, perf 4530-33 ft, flow 98 bbls, 9/64-in, td 4543 ft.

SOUTHWEST TEXAS NEW PAYS

Live Oak County—Goebel: Henderson Coquat's Goebel 1, 1320 ft n th 990 ft w fr se cor 383-ac tr, Refugio County School Land sur, A 398, 5½-in 7090 ft, dual completion, perf 6972-82 ft, flow 31 bbls 51.5 dist, 85,000,000 gas open flow, Luling sand perf 7082-84 ft, flow 96 bbls 38-gr oil 3/16-in, td 7090 ft.

Starr County—Lockhart: Lockhart & Davenport's Garza 1, 330 ft fr n&wl's share 68, J. A. de la Garza Falcon porcion 80, 223-ac tr, 5½-in 3790 ft, perf 3780-90 ft, flow 18 bbls, ¼-in, td 3790 ft.

SOUTHWEST TEXAS WILDCATS

Duval County — Failure: J. W. Gorman's Bain 1, 330 ft fr s&el's A. S. Burris sur 264, A 1938, abnd 2266 ft.

Live Oak County—Failure: Dirks Bros. and Henderson Coquat's Knight 1, 660 ft fr s&el tr 6, Lacks & Knight, J. R. Johnson sur 263, abnd 8203 ft.

Live Oak County—Failure: E. H. Smith's Miller 1, 330 ft fr n&el's blk 3011, sec 59, abnd 1650 ft.

Starr County—Failure: Judge Bros. Salinas 1, Sacatosa area, 1220-ac lse, Antonio Salinas gr, abnd 1662 ft.

Zapata County—Failure: V. G. Schimmel's Fee 1, 6340-ac lse, porcion 27, abnd 3017 ft.

SOUTH CENTRAL TEXAS WILDCATS

Gonzales County — Failure: Baldridge & King's Bowers 1, 5 mi se Waelder, 100-ac lse, L. Mullett sur, abnd 5505 ft.

Gonzales County—Failure: H. H. Coffield's Harris 2, 6 mi s Waelder, 369-ac tr, abnd 2140 ft.

TEXAS GULF COAST

Chambers County—Oyster Bayou: Sun's Jackson 17, 882 ft fr wl, 1831 ft fr nl sec 123, 5½-in 8375 ft, sand 8265 ft, perf 8280-8320 ft, flow 682 bbls, ¼-in, td 8375 ft.

Chambers County—Seabreeze: Sun's Eng 1, 235-ac tr, T&NO 113, abnd 9400 ft.

Harris County—North Houston: Kirby Petroleum Co.'s Hillebrenner 1-O, 21-ac tr, T. M. Dorsett sur, A222, dual gas completion, 7-in 7600 ft, perf 6946-53 ft, gas, perf 6780-6820 ft, gas, shut in, td 7600 ft.

Harris County—Satsuma: Stanolind's Dopslauf 1-D, 40-ac tr, WCRR sur, perf 7261-67 ft, flow 95 bbls, ¼-in, td 7517 ft.

Liberty County—Hull: Gulf's Phoenix Development 117, 275-ac tr, Jesse Devore Lge, perf 1675-1700 ft, flow 134 bbls, 5/16-in, td 2906 ft.

Liberty County—Kirby: General Crude's Welch 5-B, 660 ft fr el, 330 ft fr nl 456-ac tr of 956-ac tr, 5½-in 7715 ft, sand 7610 ft, perf 7610-40 ft, flow 565 bbls, ¼-in, td 8427 ft.

Matagorda County—North Markham: Sun's Braman 5, 510 ft fr swl, 660 ft fr sel of 40-ac unit, 2903-ac tr, Hosea Lge, 5½-in 8100 ft, sand 7710 ft, perf 7710-30 ft, flow 141 bbls, ½-in, td 8100 ft.

San Jacinto County—Mercy: Shell's Dunnam 7, 830 ft fr e'ly el of Richardson sur, 1020 ft fr s'ly nl of sur, 5½-in 8299 ft, open hole 8299-8305 ft, flow 74 bbls, ½-in, td 8305 ft.

TEXAS GULF COAST WILDCATS

Brazos County—Failure: Mudge Oil Co.'s Koppe 1, 200-ac tr, J. A. Phelps sur, abnd 4535 ft.

Fort Bend County—Failure: Pure's Woods 1, 2 mi s Almeda, J. C. Stafford sur, abnd 8321 ft.

Harris County—Failure: Continental's Mellinger 1, WCRR 17, 5 mi ne Fairbanks, abnd 7758 ft.

TEXAS PANHANDLE

Hutchinson County: J. M. Huber Corp.'s Herring 11, 1650 ft out nwc TWNG 3, pump 58 bbls, acid 5125 gals 2995-3016 ft, td 3088 ft.

Phillips' Sanford-Mudget 2, 1320 ft nsl and 660 ft ewl of n-160 ac H&TC 85, blk 46, abnd 3003 ft.

Shamrock O&G Corp.'s Stewart 9, c ne nw AB⅛M 19, blk M-16, pump 40 bbls, plus 217 bbls water, 3158-61 ft.

Skelly Oil Co.-Cabot Carbon Co.'s Herring 12-A, 4966 ft snl and 1542 ft ewl of e-3011 ac of E. Almaguie sur, pump 167 bbls, shot 180 qts 3035-70 ft, td 3074 ft.

WEST TEXAS

Andrews County—Mascho: Phillips' University 2-A, 1920 ft snl and 2051 ft ewl sec 3, blk 10, flow 82 bbls, 24/64-in, acid 3000 gals 4279-4600 ft.

Cochran County—Slaughter: Continental's Dean 3-91, leag 91, Lipscomb CSL, pump 140 bbls, acid 17,000 gals 5020-64 ft.

Devonian et al's Duggan 33-A, 510 ft out swc lab 15, leag 55, Oldham CSL, flow 828 bbls, 2½-in, acid 12,000 gals 5000-51 ft.

Jerry Hawkins et al's Mallet 27-A, 580 ft out nwc lab 17, leag 47, Edwards CSL, flow 981 bbls, 2-in, acid 11,500 gals 4901-91 ft.

Texas Co.'s Mallet 9-F, 580 ft out nwc lab 16, leag 51, Scurry CSL, flow 464 bbls, cas, acid 11,000 gals 5013-50 ft.

A.A.A. Oil Corp.'s Boyd-Texaco 2, 3106 ft wel and 3794 ft snl leag 53, Oldham CSL, pump 162 bbls, acid 12,000 gals, td 5055 ft.

Ector County—North Cowden: Llano Oil Co.'s (Woodley) Holt 5-B-X, c sw ne PSL 18, blk A, elev 3096 ft, jkd 4931 ft.

Hockley County — Slaughter: Eugene Constantin et al's Elliott 2, 440 ft out sec lab 10, leag 42, Rains CSL, flow 199 bbls, ¾-in, acid 8000 gals 4949-62 ft.

Eugene Constantin et al's Orcutt 2, 440 ft ewl and 1430 ft nsl e½ lab 11, leag 42, Rains CSL, flow 107 bbls, 2-in, acid 8000 gals 4918-52 ft.

Honolulu's Mallet 31-B, 580 ft out sec lab 15, leag 48, Edwards CSL, flow 527 bbls, 2½-in, acid 10,000 gals 4962-5018 ft.

T. F. Morrow et al's Mallet 27, lab 13, leag

EVERYBODY EVERY PAYDAY AT LEAST 10%

WAR MEMO:

The aims behind the War Bond Payroll Savings Plan are worth repeating over and over:

1. To help pay the stupendous production costs of winning this war.

2. To siphon into production channels that portion of America's *current income* which would otherwise flood the Nation with inflationary cash.

3. To create individual backlogs of financial security for use during the industrial readjustment after the war.

4. To create a Nation-wide saving habit which will serve the interests of both Capital and Labor after the war.

Keep after that "10% of gross payroll goal"! Buy War Bonds to the limit yourself—encourage your employees to do likewise!

48, Edwards CSL, flow 853 bbls cas, acid 12,000 gals 4908-55 ft.

T. F. Morrow et al's Mallet 31, lab 12, leag 48, Edwards CSL, flow 732 bbls cas, acid 12,000 gals 4915-61 ft.

T. F. Morrow et al's Mallet 35, lab 11, leag 48, Edwards CSL, flow 713 bbls cas, acid 12,000 gals 4896-4941 ft.

T. F. Morrow et al's Mallet 36, lab 11, leag 48, Edwards CSL, flow 803 bbls cas, acid 10,000 gals 4906-53 ft.

Permian Oil Corp.'s Mallet 22-B, 510 ft out nec lab 25, leag 49, Scurry CSL, flow 1242 bbls cas, acid 11,500 gals 5000-39 ft.

Pecos County—Pecos Valley Low Gravity: Gee. T. Abell et al's Scharff-Blackmon 1, 4950 ft nsl and 2310 ft wel H&GN 4, blk 9, abnd sul w 1817-33 ft.

Ward County—Byrd: Stanolind's Wood 3-A, 1993 ft from se and 662 ft from sw lines H&TC 34, blk 34, abnd 2798 ft.

Winkler County—Keystone: Texas Co.'s Campbell 14, 550 ft out nwc sw PSL 22, blk B-3, flow 246 bbls cas, shot 240 qts 3224-3346 ft, td 3350 ft.

WEST TEXAS WELLS DEEPENED

Pecos County—Abell: Siemoneit Dr. Co.'s Walsh 1, 330 ft out swc lot 11, H&GN 25, blk 9, elev 2386 ft, otd 4989 ft, Ellenburger 5800 ft, flow 728 bbls, ½-in, td 5890 ft.

Upton County—McCamey: Humble's Ricker 22-B, sec 6, blk R, E. C. Grooms sur, otd 2685 ft, pump 73 bbls, td 2738 ft.

Humble's Ricker 24-B, sec 6, blk R, E. C. Grooms sur, otd 2685 ft, pump 64 bbls, acid 1000 gals 2630-2740 ft.

Ward County: Cities Service's McDonald 4, PSL 30, blk B-29, otd 2525 ft, abnd 2660 ft.

WEST CENTRAL TEXAS

Brown County: Hightower O&R Corp.'s Low 2, 200 ft sw of m/w/ne line tr and 1000 ft from nw line Wm. Iron sur 52, 824,000 gas, acid 3000 gals 1404-62 ft.

Coleman County—Coker: Eugene Constantin et al's Coker 1, se se ne GH&H 72, blk 2, flow 26 bbls, 12/64-in, 2970-99 ft.

Jones County—South Noodle: Cardinal Oil Co.-J. W. Byram's Carter 3, 467 ft snl and 1401 ft wel se T&P 33, blk 18, elev 1843 ft, pump 307 bbls, acid 3000 gals, td 2431 ft.

Jones County—Wimberly: Butler-Horne Dr. Co.'s Wimberly 5-A, 330 ft out nwc blk 87, DeWitt CSL, leag 126, 1st dual completion for field, elev 1751 ft, Lower Hope 2293-2325 ft, flow 667 bbls, ¼-in, acid 3000 gals, perf 2300-24 ft; Gunsight pay (2nd) 2267-2475 ft, flow 1242 bbls, 17/32-in, acid 1000 gals, perf 2382-2402 ft, td 2475 ft.

Shackelford County—Roark-Nail: R. H. Roark et al's Nail 7, 1240 ft snl and 1980 ft wel ETRy 136, pump 25 bbls, sand 1510-16 ft.

Stephens County—Donnell: Christie Bros. Donnell 2-G, 467 ft from ne and 3790 ft from nw lines TE&L 1208, elev 1076 ft, Bend 3250 ft, Marble Falls 3950 ft, abnd 4223 ft.

WEST CENTRAL TEXAS WILDCATS

Brown County—Failure: W. H. Sloan & R. C. Crabb's McBride 1, 150 ft out swc lot 11, Jesse Dickinson sur, abnd 954 ft.

Callahan County—Failure: A. W. Cherry and Barron Kidd's Seale 1, 660 ft snl and 220 ft ewl BBB&C 129, abnd 804 ft.

Coleman County—Failure: Sohio Producing Co.'s Morris 1, 1890 ft nsl and 695 ft ewl sec 68, blk 2, J. F. Tompkins-GH&H sur, abnd 3453 ft.

Comanche County—Failure: R. H. Roark et al's Hodges 1, 400 ft snl and 1720 ft wel of s½ H&TC 3, blk 2, abnd 2915 ft.

Jones County—Failure: G. M. Gillespie-Phillips' Roberts 1, se se nw Orphan Asylum Lands sec 47, elev 1739 ft, Bluff Creek 2150 ft, Flippen sand 2185 ft, abnd 3885 ft.

Shackelford County—Failure: Roeser-Pendleton-Conoco's Cook 5-A-116, 1024 ft snl and 1029 ft ewl ET 116, abnd 1765 ft.

Shell's Mathews 1, nw ne ne Blind Asylum Land sec 35, elev 1358 ft, lime 3855 ft, abnd 4582 ft.

WYOMING

Fremont County—Plunkett: Lincoln Oil & Gas Co.'s Tribal 14, cel ne sw 23-1s-1e, abnd 1130 ft.

Natrona County — Cole Creek — New Pay Zone: General Petroleum Corp.'s 48-S-16 (State) cse se sw 16-35n-77w, flow 300 bbls, ½-in, Dakota 7931 ft, Lakota 7987 ft, 5½-in 7984 ft, perforated 47 holes 7928-46 ft in Dakota, td 8008 ft.

Natrona County—Salt Creek: Stanolind Oil & Gas Co.'s Unit 11-T, sw ne sw 26-40n-79w, flow 300 bbls, 9/64-in, Tensleep 3928 ft, 6⅝-in 4005 ft, td 4035 ft.

Park County—Elk Basin: Minnelusa's Henderson E-T "F," ne nw nw 32-58n-99w, flow 1560 bbls, 2½-in, Tensleep sand, td 5272 ft, elv 4898 ft.

Park County—Oregon Basin: Dry Creek Oil Co.'s Gov't 2, ne ne sw 9-50n-100w, pump 225 bbls, Embar 4135 ft, Tensleep 4375 ft, 7-in 4350 ft, perforated 4199-4240 ft in Embar, pb 4350 ft, td 4429 ft.

Sweetwater County—South Baxter Basin: Union Pacific Railroad Co.'s Unit 3, ne nw 28-16n-10w, 2.5 gas, Frontier 2560 ft, td 2700 ft.

Weston County—Osage: Riggs Oil Co.'s State 4, cne ne se 16-46n-64w, Muddy 3214 ft, Lakota 3641 ft, abnd 3740 ft.

Updike Bros.' Gov't 4, cnw se 35-46n-64w, abnd 1964 ft.

United States Wildcat Starts

ARKANSAS

Cleveland County: Lion's Reap 1, sw se 11s-9w, lcn.

Franklin County: Arkansas Western Gas Co.'s Dolen-Vernon 1, ne nw ne 23-10n-27w, lcn.

Little River County: L. Ochsenhein's Simpson 1, sw ne se 35-11s-30w, lcn.

Monroe County: Sohio's Dowell-Gann et al, sw sw sw 22-3n-3w, dr.

CALIFORNIA

Fresno County: Universal Consolidated Oil Co.'s Taylor 1, nw ne nw 14-15-17, Raisin City area, lcn.

Kern County: K. F. Gill's Young 1, sw sw se 30-27-28, Mount Poso area, lcn.

Paloma Operators Committee's Paloma Unit 34-4, sw se nw 4-32-26, Paloma area, rig.

Western Gulf Oil Co.'s Symons 31-7, nw ne nw 7-31?7, Paloma area, rig.

Grandell Oil Co.'s Claflin 5, sw se se 10-27-27, Poso Creek area, lcn.

Pacific Western Oil Corp.'s Enas Fee 27A, ne se se 21-27-27, Poso Creek area, lcn.

Golden Bear Oil Co.'s Agey 4, nw ne nw 28-27-27, Poso Creek area, lcn.

Bandini Petroleum Corp.'s Signal Mills 1, nw sw sw 24-28-28, Round Mountain area, lcn.

Tide Water Associated's KCL 54-8, 8-30-26, lcn.

Tulare County: Tide Water Associated's Corehole 76-21, sw ne se 21-21-26, Porterville area, lcn.

Ventura County: Cal Camp Oil Corp.'s Harrington 1, se ne nw 21-3-19, Happy Camp Anticline area, lcn.

ILLINOIS

Clay County: Superior's Hinterscher et al 1, ne se nw 11-4n-8e, lcn.

Fayette County: Skelly's Shericker 1, sw sw se 24-5n-1w, lcn.

J. L. Smith's Bradley 1, se se sw 17-16n-1e, dr.

J. H. Hudson's Feller 1, se nw sw 23-6n-4e, lcn.

Hamilton County: Nat'l Assoc. Pet.'s Rebstock 1, sw sw nw 26-4s-7e, dr.

C. E. Politis' Strake 1, sw ne ne 13-6s-7e, lcn.

Marion County: Gulf's Floyd 1, se se nw 25-1n-3e, lcn.

Shelby County: B. M. Heath et al's Carnes 1, nw ne nw 35-11n-4e, lcn.

Wayne County: B. M. Heath et al's Richardson 1, nw se 31-2s-5e, lcn.

Pure's Kast A-1, ne ne ne 24-1n-7e, lcn.

INDIANA

Dubois County: Hayden & Michal's Himsel 1, sw se sw 27-1n-6w, lcn.

Posey County: Lewis Prod. Co.'s Sussich 1, nw ne sw 27-7s-14w, lcn.

Spencer County: Big Four Oil Co.'s Zimmerman et al 1, ne nw se 1-8s-7w, lcn.

KANSAS

Clark County: Olson et al's Central Life 1, c sw ne 23-32s-24w, lcn.

Graham County: Mid-Continent and Natl Assoc Pet's Davis 1, c ne se 18-8s-25w, lcn.

Harvey County: Derby and Sunray's Webster 1, sec 15-24s-2w, dr 235 ft.

Kiowa County: Olson's Price 1, c sw sw 22-28s-20w, rur.

Lincoln County: Bird, Handley & Sheedy's Paull 1, ne sw sw 26-13s-7w, mim.

Marion County: National Refining Co.'s Hawks 1, nwc se 17-19s-4e, dr.

McPherson County: Helmerich & Payne's Neufeld 1, nwc se 18-21s-5w, dr 3460 ft.

Pratt County: Lion's Chitwood 1, ne se nw 23-28s-12w, dk.

Rooks County: Nelson et al's Griffin 1, c ne ne 25-8s-16w, sd 3185 ft.

Rush County: Gulf's Schockey 1, c s/2 se se 22-20s-20w, lcn.

Trego County: Sinclair's O'Toole 1, nw ne nw 26-14s-25w, lcn.

KENTUCKY

Christian County: Hobson & Holeman's West 1, 2-F-26, lcn.

H. L. Browning's McIntosh 1, 20-H-25, dr.

Edmonson County: W. A. Batten et al's Finn 1, 23-H-48, dr.

McLean County: O. D. Vickers et al's Hudson 1, 24-M-29, dr.

Ohio County: Tom Galey and Ashland's Krik 1, 16-M-31, dr.

Todd County: Coleman & Son's Garrett 1, 20-G-28, dr.

Webster County: Ashland Refining Co.'s Ogden 1, 11-M-24, lcn.

NORTH LOUISIANA

Bienville Parish: Mid-Continent's Jordan 1, se sw 30-16n-5w, lcn.

J. S. McCullough's McConaghy 1, e½ nw 19-16n-4w, mim.

Caldwell Parish: Northern Ordnance's McMullen, se nw 20-13n-2e, spud.

Ouachita Parish: Westgate-Greenland's Werner 1, se sw 9-17n-2e, spud.

Natchitoches Parish: C. H. Bigsby's Jordan-Lilly 1, ne ne 28-9n-10w, lcn.

Sabine Parish: Seaport-Crosby's Lucius, sw sw ne 4-5n-12w, lcn.

MICHIGAN

Arenac County: Ervin Major's Pula 1, nw ne 19-18n-4e, dr.

Bay County: Michigan Producers & Refiner's Trautner 1, s½ sw sw 7-13n-4e, dr.

MONTANA

Pondera County: Texas' Schlepp 1, cse se se 21-27n-2w, Brady block, lcn.

NEW MEXICO

Lea County: Neville G. Penrose, Inc.'s Crozier 1, c sw nw 1-20s-33e, lcn 3700-ft cable-tool test.

Neville G. Penrose, Inc.'s State 1, c ne sw 11-15s-35e, lcn 5600-ft test.

Skelly's State 1-U, c ne ne 5-22s-35e, lcn.

Torrance County: Stone Bros. et al's Truett & Wood 1, c nw ne 1-6n-13e, lcn.

OKLAHOMA

Lincoln County: Creekmore & Rooney's Jones 1, ne sw sw 1-16n-2e, dr.

Pawnee County: Sand Springs Home's Smith 1-A, se nw nw 30-20n-7e, rig.

Pottawatomie County: J. F. Root et al's Marshall 1, nw nw se 31-6n-4e, rog.

Seminole County: Winona Oil Co.'s Tiger 1, se sw nw 24-10n-7e, dr.

LOWER TEXAS COAST

Bee County: H. E. Dirks' Goree 1, 400-ac lse T. B. Barton sur, lcn.

W. Earl Rowe and Rodney DeLange's Mattingly 1, 280-ac tr, Patrick O'Boyle sur, A46, lcn 4700-ft test.

Jim Wells County: William F. Morgan's Vandenberge 1, 168-ac lse, F. M. Rider Ranch, Marcelina Lopez gr, lcn 6000-ft test.

Karnes County: Clark & Cowden's Micha 1, 200-ac tr, J. J. Pickett sur, A227, lcn.

Lavaca County: Humble's McElroy 1, 200-ac tr James Frazier sur, lcn 10,000-ft test.

Nueces County: Sinclair Prairie's Shary 1, 2½ mi sw Robstown, 120-ac lse, lcn 8000-ft test.

Victoria County: Quintana's Beall 1, 2 mi n D'Acosta, 478-ac lse, A391, lcn.

SOUTHWEST TEXAS

Webb County: Dulup Oil Co.'s Garcia 1, 40-ac lse, Los Ojuelos gr, 6 mi s Mirando City, lcn 1900-ft test.

H. H. Weinert and A. B. Buchanan's Leal 1, 323-ac tr, sur 667, 2 mi ne West Cole field, lcn 2775-ft test.

Ralph Fair's McKinney 1, nw 50-ac tr of 82.5-ac tr Ezekiel Smith sur 23, A471, 3½ mi s Nixon, lcn.

SOUTH CENTRAL TEXAS

Travis County: F. M. Ginther's Berry 1, 280-ac lse, Jose Antonio Navarro sur, se Austin, lcn.

TEXAS GULF COAST

Brazoria County: Glenn H. McCarthy's Munson 1-A, Bailey's Prairie area, 660 ft fr s&el 1100-ac tr Asa Mitchell sur, A97, lcn.

Polk County: Humble's Carter 3-B, nw flank Segno, 1766-ac tr, Andres Morales sur, A52, lcn 10,500-ft test.

Tyler County: Humble's Goolsbee 1-B, Warren area, 326-ac tr, BBB&C 3, lcn 8500-ft test.

EAST TEXAS

Anderson County: Carter-Gragg Oil Co.'s Jaramillo 1, 500 ft out swc 40-ac unit, Elizabeth Groce sur, lcn 5000-ft test.

Bowie County: Permac O&G Co.'s Musseldine 1, 330 ft out nwc of Samuel Poer sur, 2½ mi w by s Corley, lcn 6000-ft Paluxy test.

Houston County: Continental's Knox 1, 1750 ft from nw and 2200 ft from m/n/ne lines of B. Morris sur, 7½ mi w Lovelady, mim for 5000-ft slim-hole test.

Navarro County: Brown & Wheeler's Gibson 1, 660 ft out m/e/nec of Julian Fontenoy sur, 8½ mi nw Cayuga deep prod, lcn for 10,000-ft Smackover test.

Smith County: L. O. Gandy et al's J. M. Plunk 1, 712 ft ewl and 630 ft nsl of E. M. Hunt sur, 2½ mi n Jamestown, mim for 6500-ft test.

Bowie County: Permac Oil & Gas Co.'s Tidwell 1, J. W. Weaver sur, lcn.

Harrison County: Siosi Co.'s Lindsey 1, D. G. Grouse sur, lcn.

Panola County: Continental Oil Co.'s Burnett 1, Cheairs sur, lcn.

NORTH TEXAS

Clay County: Bridwell Oil Co's Harrison-Allen 2, 1292 ft from sw and 1050 ft from se lines J. Duncan sur, A111, lcn 1300-ft test.

Fortex Oil Corp.'s Myers 1, 600 ft from se and ne lines blk 49, E. Story sur, A419, lcn 1200-ft test.

Cooke County: D. L. Monroe et al's Thornton 1, 180 ft wel and 233 ft nsl of L. C. Gibbs sur, A402, lcn 2000-ft test.

Jack County: Billy Bridewell et al's S. E. McClure 1, 330 ft out nwc T. L. Wales sur, A1014, lcn 2500-ft test.

Montague County: Continental's Spencer 1,

330 ft out swc of E. Green sur, A308, lcn 4500-ft test.

Wilbarger County: Texas Co.'s E. L. Main 1, 555 ft out nwc se ne H&TC 16, blk 8, mim 5500-ft test.

WEST CENTRAL TEXAS

Jones County: Merry Bros. & Perini and Alder Oil Co.'s Hawthorne 1, 330 ft out nwc 120-ac tr and blk 3, J. W. Kissick sur 204, lcn.

Palo Pinto County: Palo Pinto O&G Co.'s J. F. Teichman 1, nw se sw T&P 52, blk 2, lcn.

Taylor County: Lewis Production Co.'s Teaff 1, 330 ft out nec W. R. Willis sur 122, lcn 2700-ft cable-tool test.

NORTH TEXAS

Archer County: Fortex Oil Corp.'s Colgan 1, 330 ft out sec T&NL 2470, lcn 1600-ft test.

Clay County: Consolidated Oil Co.-L. T. Burns' Bryant Edwards 1, 6480 ft snl and 2260 ft ewl of S. C. Beldon sur, A 12, lcn 6400-ft test.

WEST TEXAS

Andrews County: Union Oil Co.'s Cowden 1, c ne nw PSL 18, blk A-55, lcn 11,000-ft Ordovician test.

Dawson County: Seaboard Oil Co.'s Spraberry 1, c ne ne T&P 38, blk 34, T-5-N, lcn 6000-ft test.

Lubbock County: John R. Sharp et al's Brown-Stanolind 1, c sw nw BS&F 113, blk C, 10 mi ne Lubbock, lcn 5500-ft test.

Winkler County: Stanolind's Sealy-Smith 1, c sw sw G&MMB&A 50, blk A, lcn 6500-ft Clear Fork test.

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Squeaks from the Bull Wheel

Competition

"Why did the foreman fire you?"

"Well, you know the foreman is the man who stands around and watches the others work."

"Yes, anyone knows that. But why did he fire you?"

"He got jealous of me. A lot of the fellows thought I was the foreman!"

Fatal Mistake

First Farmer—"What became of that fellow you hired from town last week?"

Second Farmer—"Oh, he's gone. He was a garage mechanic and one day when the mule team wouldn't budge he crawled under 'em to see why they wouldn't go."

Deceptive

A salesman was rattling along a country road in Tennessee, when he came to a ford. A Negro was standing by the little stream where some ducks were swimimng. The salesman said: "Can I get through the creek with this car?"

"Yes, suh, go right through."

The salesman thus encouraged, drove into the stream, only to find that the water was so deep that it flooded his engine. He and his companion had to get out into the stream with the cold water up to their armpits and push the car to the bank.

The salesman turned and said: "What do you mean by telling me I could drive through that creek?"

"Well, boss, I never knew dat water was so deep. It only come half-way up on my ducks!"

Solution Is Found

Two women in a railway car argued about the window and at last called the porter as referee.

"If the window is open," one declared, "I shall catch cold and will probably die."

"If the window is shut," the other announced, "I shall certainly suffocate."

The two glared at each other. The porter was at a loss, but he welcomed the words of a man with a red nose who sat near. Said he:

"First, open the window. That will kill one. Next, shut it. That will kill the other. Then we can have peace."

Came Dawn

Father: "It must be time to get up."

Mother: "Why, dear?"

Father: "The baby has just fallen asleep."

Commonplace

The trainer put his two performing dogs through their routine while the vaudeville agent watched utterly bored until, at the finish, the little dog piped up, "Well, pal, how's about booking us?"

"My God," exclaimed the agent, electrified, "You don't mean the little dog's talking?"

"Nah," said the trainer, wearily. "The big dog's a ventriloquist."

Like a Man!

"Did he take his hard luck like a man?"

"I'll say he did—he blamed it on his wife."

After Meals

A cook in a lunch room was telling a customer whom he had just served about his record in World War I. "Yes sir," he said, "I was officers' cook for two years, and was wounded twice."

"You're a lucky man. It's a wonder they didn't kill you."

Potent Word

A negro trooper met up with some hilarious Frenchmen. The next morning he was brought up before his captain charged with intoxication.

"Young man," said the captain, "you've got a mighty good record, and I'm sorry. Have you any excuse to offer for this outbreak?"

"I ain't got no excuse, please, captain, but I'se done got a good reason."

"A good reason? What is it?"

"Well, captain, I dunno de English word fo' it, but de bunch I met las' night called it 'encore'."

Only Explanation

Wife—A fortune teller told me my second husband would be handsome and clever.

Husband—Do you mean to say you were married once before and never told me about it?

Climbing

"How did Junior make out in his latest exams?"

"Oh, he's doing much better. He was almost on the top of the list of those who failed."

Generous Papa?

"I hope you appreciate young man, that in marrying my daughter you are getting a big-hearted, generous girl."

"I do, sir, and I trust she has acquired those fine qualities from her father."

Nodding Wit

"What is work?"

"Everything is work."

"What! Everything is work?"

"Yes, sir."

"Then I take it that you would like the class to believe that the desk you are reclining on is work?"

"Yes, sir—woodwork."

Strategy

A farmer was plowing one horse, but he was yelling "Giddap, Jack. Giddap, Jerry. Gidday, Casey. Giddap, Cromwell."

A stranger passing by asked, "How many names does your horse have?"

"Oh," said the farmer, "his name is Jack, but he don't know his own strength. So, I put blinders on him and yell all those other names. He thinks he has other horses helping him."

Neophytes

"Sergeant, pick me out a nice gentle horse."

"Have you ever ridden a horse before?"

"No."

"Ah, here's just the animal for you. Never been ridden before. You can both start together."

A LETTER TO AN ADMIRAL

CONCERNING US

"My dear Admiral:

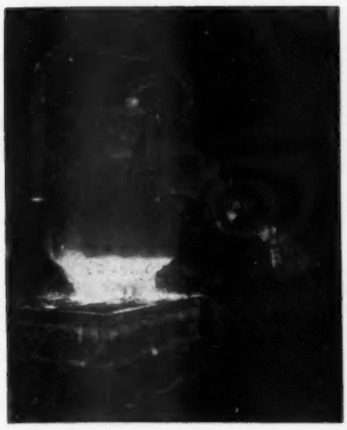
"It is not my intention to interfere with any plans that you may have had, and I do not know just how the different firms qualify for recognition but, if you wanted to look up:

"Dedman Foundry & Machine Company,
415 North St. Charles Street,
Houston, Texas,

and find that they are doing as good a job for their other customers as they are for us, it might be possible that you would like to have their activities rewarded.

"I thought in these times . . . you might like to have an outstanding crowd like this called to your attention."

☆



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Oil Center Tool Company Well Head Assembly

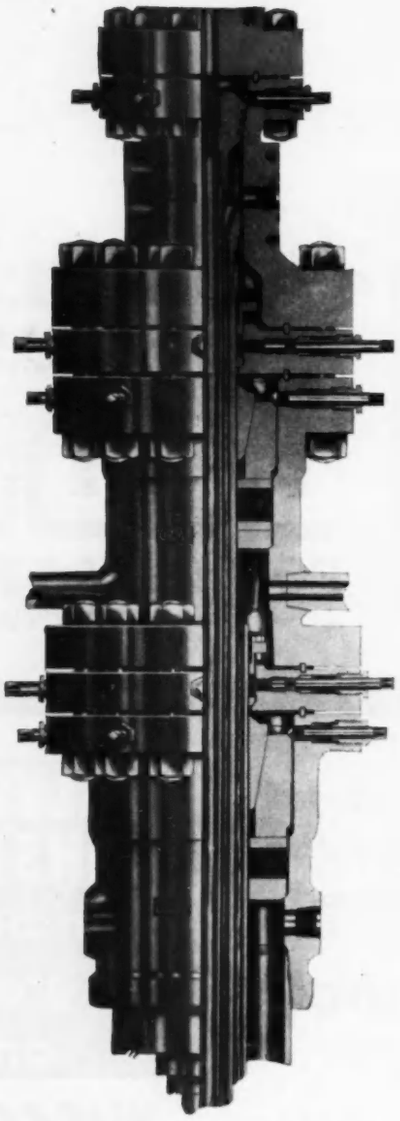
Oil Center Tool Company, Houston, has designed a well-head assembly for suspending and sealing casing and tubing strings in multi-zone well completions.

For the purpose of illustration, in a 3-zone assembly the starting head is a Type C-9 casing head which suspends and seals the intermediate oil string. It is a slip suspension type head with neoprene seal rings below the slips. Weight of the casing string compresses the packing to effect a seal; however, lock-down screws above the slip bowl provide a means of applying additional compression to the packing. An O-C-T Type PF-1 packoff flange is installed above the casing head to provide an additional seal. When the intermediate oil string is suspended and cut off, the packoff flange and stuffing box is slipped over the casing and bolted down on top of the casing head. Initial compression is applied to the neoprene packing in the conventional manner; however, compression screws are also provided in the flange to permit tightening this upper seal at any time after the well is completed. Thus, with a seal above and below the slips, hydraulic test pressure may be injected between the two seals to determine whether or not they are pressure-tight. The Type PF-1 packoff flange is available with or without means for testing the seals. In event a leak is detected in either seal, compression may be applied to the packing by tightening the lock down screws and compression screws.

An O-C-T Type C-9-D casing head is installed above the Type C-9 casing head to suspend and seal the long oil string. This head employs a neoprene stripper seal below the neoprene packing rings. The stripper permits raising and lowering of the long oil string for packer-setting operations under pessure and also permits breaking circulation at this time. The long oil string is then suspended and sealed in the same manner as the intermediate oil string in the Type C-9 casing head, the Type PF-1 packoff flange again being used to provide an additional seal above the slips. If desired, the packoff flange may be provisioned for testing both seals. Should a leak be detected in either seal, the lock-down screws in the packoff flange may be tightened to apply more compression to the packing.

An O-C-T Type T-16 tubing head is used to suspend and seal the tubing string. Seal is accomplished by compressing three rings of packing on the hanger. Compression is furnished by the weight of the tubing string and the lock-down screws in the top flange of the head. The hanger will pass through flanged valves and blowout preventer equipment. A side-door choke, made up in the tubing string above the tubing to-long-oil-string packer, is used to produce one zone through the tubing.

The neoprene seals can be tightened, should it become necessary, by making up on the lock-down and compression screws provided on the outside of the well-head assembly.



Oil Center Tool Well Head Assembly

Lubricator

The Farval Corporation, 3293 E. 80th Street, Cleveland 4, Ohio, has published an 8-page bulletin on the Multival System which is described as an improved method of providing positive lubrication to a group of bearings from a central distributing block. This system delivers lubricant to individual bearings under pressure.

Pipe Threading Machines

Oster Manufacturing Company, Cleveland, Ohio, has recently published complete manuals covering operation and maintenance of portable and stationary pipe-threading machines.

Baker Oil Tools Awarded Army-Navy E

Baker Oil Tools, Huntington Park, California, recently was awarded the Army-Navy E for excellence in production of war materials.

The presentation was made by Colonel K. B. Harmon, chief of the San Francisco Ordnance District, to R. C. Baker, president, representing the company, and Betty Rice, C. A. Jensen and A. C. Pazdernik, representing workers.

Union Wire Rope Awarded Third Army-Navy E

Union Wire Rope Corporation, Kansas City, Missouri, has been awarded the Army-Navy E for the third time. In praising the production record of the company, Rear Admiral Charlton said that the wire rope made for the Navy in recent months would stretch from the plant in Kansas City to Guadalcanal, take a hitch around a palm tree and extend on to Australia.

Gates Rubber Company Awarded Army-Navy E

Gates Rubber Company was awarded the Army-Navy E, at Denver, Colorado, recently, for excellence in production of war materials.

Pump Testing Codes

Hydraulic Institute, 90 West Street, New York 6, New York, announces complete revision of the Test Code Section of its standards.

This Test Code Section, first published in 1936, contains specific recommendations for the testing of centrifugal and rotary pumps, both for acceptance tests in the field, and in the plant of the pump manufacturer.

The code contains the limiting conditions for all methods of quantative determination of capacity, head, and power input, whereby the accuracy for an acceptance test can be obtained.

Valve Recognition

Reading-Pratt & Cady Division of American Chain & Cable Company, Bridgeport, Connecticut, has published a chart for simplifying the recognition of valves and their uses. The chart puts valves into four basic types, explains what service the four types of valves perform, how they operate and where they are used. Also the flow characteristics of each valve are given and the symbol sketches shown.

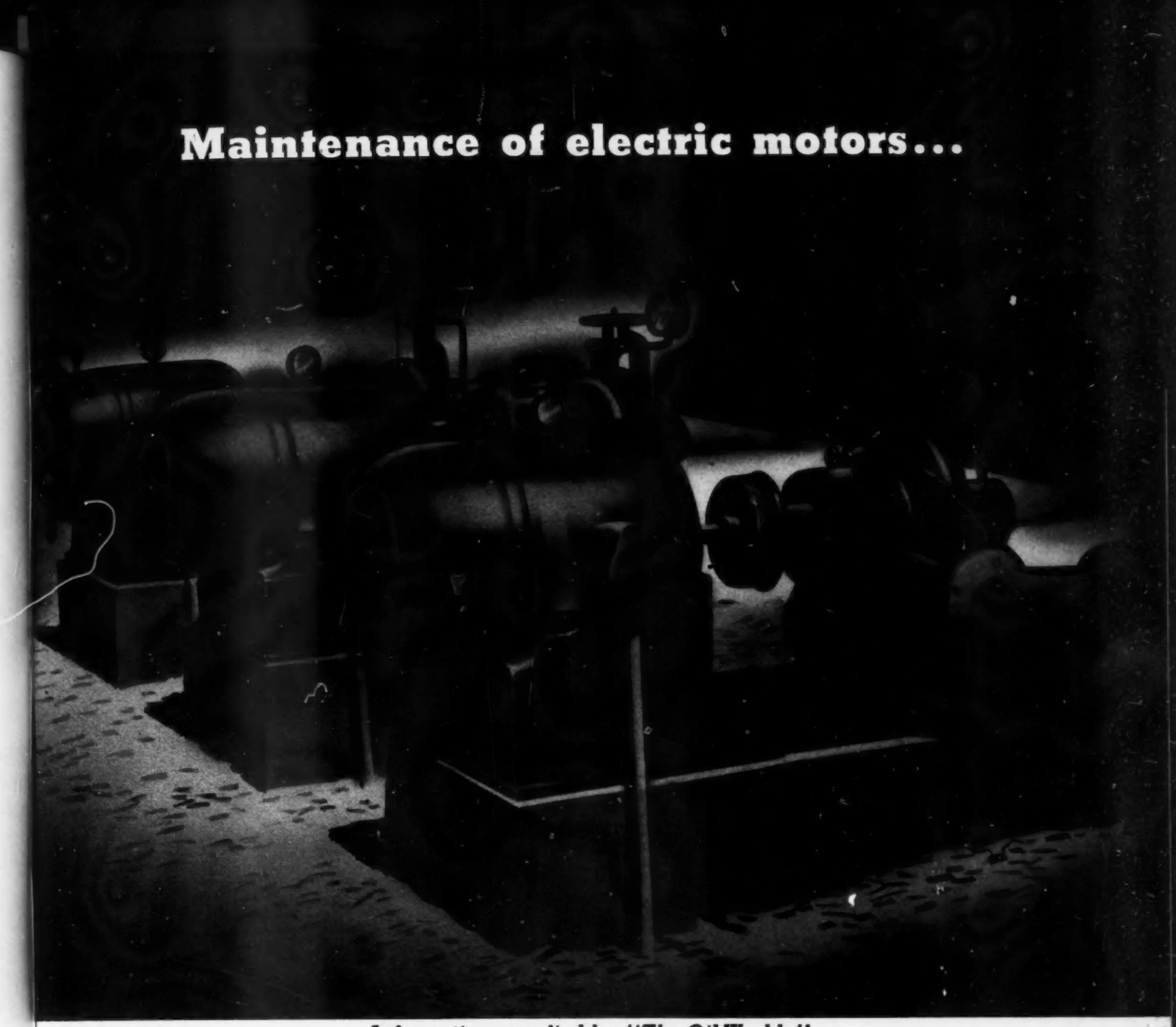
Heat Transfer Equipment

Young Radiator Company, Racine, Wisconsin, has issued catalog No. 143 describing Young heat transfer equipment for various applications, including oil fields.

Engineering Review

Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, has published its 1942 Annual Review of engineering progress. The booklet has been compiled for engineers, technicians, students and executives in government and business.

Maintenance of electric motors...



Information supplied by "The Oil Weekly"

As with any other machine, proper periodic maintenance will add considerably to the life and efficiency of electric motors in service. Proper maintenance practice should include:

1. Protection against overload. An overloaded motor will heat up, thus giving warning in time to permit correction of load conditions. A temperature rise of over 95° F., may also indicate drive friction, or misalignment.

2. Guarding against dust and dirt. Both fill air passages, preventing proper ventilation. Dust on the windings absorbs oil, which ruins insulation.

3. Protection against moisture. This applies particularly to motors built for indoor service that are pressed into use outdoors.

4. Periodic checking of insulation resistance. Much trouble can be avoided if deterioration of winding insulation is spotted in its earlier stages.

5. Safeguarding electrically. This implies use of proper starting and control equipment for each type of motor employed. Motors should also be equipped with overload and under voltage releases if they are to give their best service.

6. Proper lubrication. Motors are so constituted that too much lubricant is often worse than not enough. Excess oil or grease usually gets on the windings, promoting insulation breakdowns.

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

ARMY E NAVY

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The Orbit Master Valve is quick opening—has easy operation and a positive shutoff. A welded bonnet valve—insurance against possible gasket leaks.

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YOUR ORBIT VALVES

will last for the duration. Meanwhile, if you have any questions regarding their care or maintenance, write us.

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OIL WELL IMPROVEMENTS CO.

SINCE 1912

TULSA, OKLAHOMA

Men in the Industry's News

F. E. RICHARDSON, manager of Pan American Pipe Line Company, and assistant manager of Pan American Production Company and Pan American Gas Company, has returned to duty at the companies Houston office after a 5-month leave of absence to assist War Emergency Pipelines, Inc., in the design and construction of the "Big-Inch."

CHARLES P. MILLER, assistant chief engineer for the Lea County Operators Committee with headquarters at Hobbs, New Mexico, will resign September 1 to engage in consulting work at Hobbs. He is a graduate of the Colorado School of Mines, and has been with the committee since 1934.

REX C. COFFEE, Shawnee, Oklahoma, district land man for Magnolia Petroleum Company, has been transferred to San Antonio to succeed the late Alex Chitwood. Shawnee vacancy to be filled by Hal V. Douglass, who has been in charge of leasing at Great Bend, Kansas.

H. J. KEMLER, general manager of the West Texas-New Mexico producing division of the Shell Oil Company with headquarters at Midland, has been transferred to Houston to assume charge of production in Arkansas, Mississippi, Louisiana, Texas and New Mexico. He succeeds Don B. Collins who died recently.

VILAS P. SHELDON, Fort Worth division petroleum engineer for Stanolind Oil & Gas Company terminated 9 years of service with the company, to become associated with C. A. Aston, New Mexico producer, in the establishment of a petroleum engineering consulting firm at Artesia.

ELLIS D. STALLARD, Carter Oil Company scout at Wichita, Kansas, has been transferred to Mattoon, Illinois, as chief scout in the company's Eastern division offices. He succeeds Dan W. Cameron, who goes to the Army September 13.

ARCH HOFFMAN has resigned as head of Skelly Oil Company's geological department in Northeast Kansas to become Kansas district geologist for J. M. Huber Corporation, with headquarters in Wichita.

R. B. KELLY, petroleum production engineer for The Pure Oil Company at Clay City, Illinois, has been named director of production for District 2 PAW.

DR. JOHN J. JAKOSKY, former dean of the school of engineering and architecture at the University of Kansas, has been appointed assistant to the president of the University of Southern California. He will direct activities in industrial research. Dr. Jakosky has served the United States Bureau of Mines, the Research Corporation and since 1929 has been a consulting research industrial engineer, particularly in the field of geophysics. He holds more than 150 United States and foreign patents, is the author of a text on "Exploration Geophysics," and contributes to national media on technical subjects, including geophysics, radio, cracking processes and oil-shale recovery.

Following receipt of his engineering degrees from the University of Kansas, the University of Pittsburgh and his D.Sc. degree from the University of Arizona, he did graduate work at the Carnegie Institute of Technology.

Among professional organizations in which he holds membership are Sigma Xi, Theta Tau, Tau Beta Pi, Society for Promotion of Engineering Education, A.I.M.E., the Society of Exploration Geophysicists, the American Geophysical Union, and the American Association of Petroleum Geologists.

HERBERT D. ARMSTRONG, formerly with the Federal Reserve Bank of San Francisco, has been elected assistant treasurer of Standard Oil Company of California, effective August 16, and filling the position recently vacated by H. C. Judd, now treasurer of the company.

HAROLD E. REED has been appointed vice president in charge of production for Engineering Laboratories, Tulsa. He is an electrical engineer with many years experience in production of precision equipment having been recently production manager with Cessna Aircraft Company, Wichita, and during 15 years of experience has been with Frigidaire Corporation, Waco Aircraft Company, Curtiss-Wright, and Beech Aircraft Corporation.

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